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ARTICLE I.—*Creasote in Menorrhagia.* By Dr. JOHN W. CROOKS of Rockport, Ind.

Creasote has been used or recommended in almost every variety of hemorrhage, but the writer does not remember to have seen any notice of it as an internal remedy in menorrhagia. Having employed it in several of the complaints for which it is generally recommended, and found it efficient and useful, he was induced to make trial of it in this troublesome affection.

The first case in which he resorted to it was one of a most obstinate character. The patient, about thirty-five years old, had been once married, but for five or six years was a widow, and all that time was a great sufferer from menorrhagia. The hemorrhage usually occurred at the regular menstrual period, and continued from ten to fourteen days. The effect of this drain upon her health, as

can readily be imagined, was most disastrous. There was an extremely emaciated, feeble, and anemic condition of her system.

The case had resisted the treatment of several physicians of experience and character. The writer prescribed creasote, and the effects were satisfactory beyond any thing that he could have expected, or even ventured to hope. In the first four weeks it was evident that improvement had begun; in six weeks she was decidedly convalescent; and in two months she regarded herself as comparatively well. She took no other medicine during that time. A slight return of hemorrhage was experienced about this time, the patient having discontinued the use of the creasote. She was then ordered to take it for ten or twelve days before the menstrual periods; and now, after the lapse of more than two years, she remains free from the complaint.

Since this case was treated, the writer has had an opportunity, with his friend and partner, Dr. DeBruler, of administering the creasote in ten or a dozen similar cases, and with as gratifying results. We have always found the remedy effectual, and have not had to employ any other styptic The form in which we prescribe it is the following:

℞.—Creasote, ℥j.
Alcohol, ℥ij.
Spts. Lavend comp., ℥iij.
Aq. destillat., ℥x.—M.

Of this, give from half a drachm to one drachm every four hours, until the hemorrhage is partially or wholly arrested. After the paroxysm is over, it may be continued during the menstrual intervals, two or three times daily for several weeks, or even months, if the case should require it. For the nervous irritability often attending these cases, it will be found occasionally beneficial to combine an opiate with the creasote.

This article is recommended with great confidence in the complaint under notice, and if, in the hands of other practitioners, it should prove as efficient as it has done in the writer's, it must soon rank high among the remedies in such cases.

ROCKPORT, Ind., February 25, 1853.

ART. II.—*Opium in Acute Inflammation.* An Inaugural Dissertation, by EDWARD COOKE, M. D. Submitted to the Trustees and Medical Faculty of the University of Louisville, February, 1853.

History. — Opium in inflammation, the propriety of which will be considered in the following pages, was introduced to the notice of the profession by the late Dr. Armstrong. He, however, regarded it rather as an useful adjuvant than as a specific — combining with it calomel, and other articles of the Materia Medica, supposed to assert a more absolute and well-defined influence over the morbid action. Some pains have been taken, and considerable research made, with a view to ascertain, if possible, who was the first person that gave to the public the evidences of the utility of opium alone in the treatment of inflammation. The result has been highly flattering to one of our own distinguished countrymen. Dr. Christison, as early as 1841, issued a treatise "On Opium in Acute Internal Inflammation," which was published in the February No. of the Edinburg Monthly Journal for that year. But in several of the diseases in which he recommended its use— in all those of much severity— he invariably premised the abstraction of blood, regarding it as one of the essential elements of success. Previous to this time, however, an American physician — Dr. Barbour — published, in the Am. Journal of the Medical Sciences, an account of his practice in inflammation, consisting in

the withdrawal of immense quantities of blood, and the immediate administration of large doses of opium. His paper is dated August, 1840. Dr. Marshall Hall, however, had adopted this mode of practice several years previously. Dr. Stokes has related several cases of peritonitis from perforation, treated by Dr. Graves, with opium alone, but as Dr. Graves, in his publications subsequent to the treatment of these cases, does not rely upon that practice in inflammation generally — not even in peritonitis — and as the opium, in the recorded cases was administered because the circumstances attending them precluded the use of the lancet, calomel, etc., we cannot, in justice, assign to him the honor which more properly belongs to another.

I presume, then, to claim for Dr. Alonzo Clark, of New York, whatever merit may attach to the authorship of this practice; for, as will be shown in the article on peritonitis, he trusts in the treatment of that disease to opium alone.

Pathology of Inflammation.—Before entering upon the subject proper of this essay, it is desirable that we should entertain correct notions of the *pathology* of inflammation; but as the space within which custom confines an inaugural dissertation is too limited to allow a thorough investigation of any subject, particularly of inflammation, I shall have to restrict my remarks to generalities, descending to particulars only when the obscurity of abstraction may so demand. I will, therefore, omit a discussion of the various theories propounded since the time of Hunter; presenting, in a form as concise and condensed as the nature and importance of the subject will admit, in addition to my own views, a summary of the theories promulgated by the most distinguished writers of the past and present. In the theories of Hunter, Cullen, Henlé, Wilson Philip, and of others, the capillaries are

regarded as the essential seat of the inflammatory process; its phenomena being ascribed to some particular morbid action or condition of those vessels, to debility, spasm, obstruction, increased action, etc. It is the opinion of Mr. Travers that *all* the tissues are implicated; of Liebig, that the diseased tissues undergo an unnaturally rapid oxydation; whilst a few, Dr. Dewitt for one, consider the organic cell to be the main element involved. These various theories, if such they may be called, relate more or less to mere local action, the explanation of the phenomena being grounded upon suppositions which afford us most ingenious specimens of that style of argumentation called by logicians and rhetoricians *petitio principii*. From no one of these, nor from all combined, have we derived any information of practical utility—nothing, that is, in addition to what was previously known.

When we consider that inflammation has its commencement in irritation, that irritation results from some unnatural or immoderate impression made upon the nerves, *that there can be no inflammation without previous irritation, and that irritation presupposes a nervous system*, we have possessed ourselves of a most important fact—a fact which alone can form a sure "stand-point" for reasoning on inflammation. Again, when, by the discoveries of Marshall Hall, we find that all the sphincters and muscles of the body are regulated and presided over by nerves, that almost every organ in the frame-work of man is known to have "a moving and directing power," it is impossible to believe that so important a system as the arterial should be without such a controlling influence. And, in truth, Wilson Philip, and Flourens have demonstrated, by carefully devised experiments, and Sir C. Bell has declared his opinion to be, that the smallest arterial twig is supplied with its nervous filaments, these filaments coming from the system of organic life. If the ganglionic system be subservient to the purposes of life—if all

the functions of the human economy be dependent on it for a supply of its vivifying influence — if life may be sustained by an animal deprived of the contres of the other systems of nerves, this being preserved intact — surely we may safely infer that the arteries, agents so essential to the maintenance of existence, receive their share in the distribution of the filaments sent out from the ganglionic system. In corroboration of such an inference on my part, the positive evidence of many anatomists and physiologists might be adduced. The acephalous and anencephalous monstrosities of Lawrence and Hall, it seems to me, should be sufficient to determine this question. They prove not only that existence is maintained through the influence of the ganglionic system, but that originality and growth of the tissues are dependent on it. Witness the action of chloroform, life being preserved, according to Dr. Hall, so long as the ganglionic centres remain unaffected by it.

Consciousness may be suspended, the powers of motion be withdrawn, yet the patient lives, the heart continues to beat, respiration goes on, though slowly and imperfectly, and, after a variable period of time, the patient is restored to his consciousness, and recovers the faculty of motion. A distinguished living physiologist, Dr. A. Clark, to whose lectures the author has often listened with pleasure and admiration, says, in enumerating the functions of the ganglionic centres, they *control* the blood-vessels, to which their filaments are most plentifully distributed; and, if the sympathetic filament going to the eye be cut, that organ becomes immediately suffused with tears. The views of M. Remak concerning the physiology of the ganglionic nervous system are very plausible and entertaining, even though they be not founded in fact. It is his opinion that the animal economy possesses two sensories, the cerebro-spinal axis, and the great ganglia of the sympathetic. He says there are some persons, he

himself being one, who have the power of calling into increased action the peristaltic movements of the intestines without the aid of the abdominal parietes. He therefore assigns to the ganglionic centres the function of volition. As "in the cerebro-spinal system of nerves two orders of action take place — the perception of sensation, and the reactions of volition" — so "two analogous actions take place in organic life — organic perception, or, as it is called, hallerian irritability, and reaction, or the function of organic reflection." Dr. Davey regards the solar plexus as the centre of this system, also as the nisus formativus of the embryonic germ. However this may be, it proves that distinguished physiologists are becoming more and more dissatisfied with the present received opinions of the functions of the nervous system; and, when the popular theories of to-day are overthrown by experiments more ingeniously devised, and more thoroughly conducted, our *pathological* basis will become more sure and steadfast, and the principles of treatment will assume a fixedness which mere speculation will be unable to subvert. Physiology is daily adding to our stock of pathological knowledge, whilst scientific investigations and logical induction are leading to more correct notions of physiological action. These agencies, united to a cautious and rational empiricism in the department of therapeutics, if working to a successful issue, will place the *science* of medicine, the boast of the last hundred years, beyond the envious cavillings and reproaches of her selfish adversaries.

The foregoing principles, together with the experiments and reasoning of J. G. Davey, have led me to the opinion that the ganglionic system is the essential to the continuance of life; that its branches and filaments are distributed to the blood-vessels of the body; that it necessarily presides over the functions of organic life, and bears an important relation to those of animal life; that the least

derangement of these nerves gives rise to morbid action in the parts to which they are distributed; that the causes of the disturbance being various necessarily engender varieties of morbid action, cold and moisture producing inflammation, malaria periodic fevers, and animal effluvia fevers of a more permanent type, etc.

My opinion, then, summarily expressed, of the pathology of inflammation is, that irritation of the organic nerves is the *"point de départ;"* the influence or result of the irritation being propagated to the blood-vessels through the medium of the numberlesss threads which these nerves send out to all parts of the body. Be it asked, upon what principles I accouut for the changes which ultimately take place in the circulating current, the viscera, etc., I shall reply by demanding an explanation of the laws of electricity and galvanism, or of the operations of mercury and strychnia. Why certain emotions produce a flow of tears, or mantle the cheek with the blush of modesty; why emotions of a different, or even of a like, kind cause an evacuation of the bladder, or an erection of the penis, are as easy of solution as the hidden and inexplicable causes of varioas morbid states of a nervous character.

Pathological Inferences.— "If debility of its fine threads (the sympathetic) be a sufficient cause to throw into dissonant action the heart and the arteries in some cases, should we not be inclined to abandon the practice which rests on depletion, counter-irritation, and treatment of this kind, and substitute in their places remedies and a regimen which may fortify and sooth the nerve?" If dropsy, for instance, be caused by an obstruction in the portal system, and if this obstruction be owing to debility dependent on an atonic condition of the nervous system, would it not be unscientific to harass and exhaust our patients with hydragogue cathartics and wasting diuretics? Or should

we, as is our aim in neuralgia, endeavor to restore to the nerves their accustomed tone, and again bring into healthful action their disordered functions? Some few have contended that the tone of a nerve once impaired could not be restored. Such have not benefitted by the actions of strychnia in lead-paralysis, and of the carbonates of iron and potash in neuralgia. This view of the supposed disturbed functions of the sympathetic is strengthened, somewhat, by the analogous actions of strychnia and the galvanic current upon the disorders of certain organs exclusively under the control of this sytsem, both as regards the kind of power acting upon the nerves, and its influence upon this particular system of nerves. If, then, *inflammation* be caused by influences acting primarily upon the nerves, irritation being the connecting link, should the employment of remedies calculated to soothe the nerves and quiet the irritation, be considered empirical?

The essential cause of intermitting fever is said to be miasmatic; and this aërial-like poison is supposed by many to operate upon the system at large, through the agency of the nervous system. Now, according to the experiences of Drs. Lind and Trotter, a paroxysm of intermittent may be either cut short or effectually prevented by large doses of opium. In case of failure, quinine, or some other nervine, will most probably effect the cure. These articles produce remote effects, operating primarily upon the nerves; through them, secondarily, upon the fluids and solids of the body.

Intermitting fever, however, is not an inflammation; nor do I contend that the causes of the two are identical in their nature. Neither should we be correct in viewing the so-called continued fevers as inflammatory, nor in assigning to them, and to intermitting, an identity of cause and nature. But *I do contend*, whatever be the peculiar and characteristic differences of cause, whether koino-

misasmatic, giving rise to periodic fevers; whether idio-miasmatic, engendering fever of the continued type; or whether consisting in moisture and diminished temperature of the atmosphere, fruitful sources of inflammation; I do contend that all these agents of disease produce their primary effects upon the nervous system; that the varying symptoms are assignable to peculiarities of cause, which peculiarities are not so well marked, nor so well understood, as is perhaps imagined; that the *principles* of treatment which guide us in the management of one, furnish us with remedies best adapted to the cure of the others; the treatment being in all cases modified by a knowledge of the causes, and by other circumstances which may arise in consequence of age, idiosyncrasy, habits, condition of system, etc., predisposing to excessive activity and violence, or to debility and prostration. The case-books of many practitioners, who have written to convey information, rather than to uphold long cherished theories, furnish us with facts which shed a gleam of light upon the results which would attend a practice based upon the principles herein set forth. Drs. Lind and Trotter have left us unmistakable evidence of the value of opium in periodic fevers; during the past summer many members of the profession were furnished an opportunity of manifesting their incredulity by an account of the extraordinary success which Dr. Henry, of Illinois, had obtained by the administration of large doses of opium in continued fever, and I sincerely trust that the following pages may carry conviction to the minds of many, of its great efficacy in inflammation. The author is acquainted with a young practitioner, of this State, an alumnus of this University, who, ever since he began the practice of his profession, has been in the habit of treating both periodic and continued fevers with opium and quinine, sometimes by one alone; most frequently by a combination or alternation of the two. He assured me of the

almost invariable success with which he had met. Give me, said he, opium and quinine, and I can do more against the fatality of these fevers than I have ever known accomplished by other remedies. My talented preceptor, with whose *practice* in continued fever, however, I am not conversant, has taught me what I know of its pathology; and no physician has been more successful in its treatment than he.

The similarity in the operation of the causes of these fevers—the continued and periodic—is shadowed forth in the course they pursue. So like, indeed, are the phenomena of remitting and typhoid fever, that some physicians, of whom Prof. Flint, I believe, is one, consider the cause of the former in such cases to be of a mixed nature, partaking of that which produces what, in the language of such a theory, might be called ordinary remittent, and of the nature of that which gives origin to continued fever. Notwithstanding the great respect and admiration I entertain for the talents, the learning, and the philosophically acquired experience, of Prof. Flint, I shall take the liberty, on this occasion, to differ from him, though the limited space allotted myself will prevent my specifying reasons for so doing. But to resume; remitting fever differs essentially from intermitting *only* in the *intensity* of the operation of the cause. Remitting, especially if it is to prove fatal, not unfrequently assumes the type of a continued fever; indeed, the last stages or periods of remitting are more akin to continued fever than to intermitting. Remitting, as it is assuming the continued form, just at that period in its progress which may be called the transition stage, may very easily be mistaken for typhoid fever. In a word, intermitting runs into remitting; remissions become intermissions; remitting takes on the garb of continued; patients afflicted with the latter sometimes have such well-marked exacerbations and remissions as to lead a physician to a most doubtful diagnosis; the

diseases shift about, exchanging and interchanging symptoms, if I may so speak, to such a degree, now presenting one type, anon another, as scarcely to leave a doubt that the treatment proper for one might be righteously enforced in the other forms; provided, always, we properly consider the modifications pointed out in a preceding paragraph.

In a large proportion of those patients who die of one or the other of these forms of fever, in almost all, autopsies will reveal inflammatory lesions in some one or more of the viscera. These lesions are not *essential* to fever—nor is any single symptom of fever or inflammation *essential*, as they may and do exist without some one of the symptoms which ordinarily pertain to them—but the frequent association of the fevers and lesions points to some connection between the febrile and inflammatory processes; which connection, though ill defined and much less appreciated, and, to all *appearances*, wanting in some rare instances, may nevertheless exist in all, and, if more thoroughly investigated, might lead to the happiest practical results.

I would not have any one infer that I deny to the humyral pathologists the partial correctness of their views of fever. It *is* a blood disease; but it is something more. It first affects the nervous system; at least the symptoms which first lead us to suspect fever, are of a like nature with those we observe in nervous diseases generally. It is only during this stage of the operation of the cause, the period of access or formative stage, that opium can be relied on, to the exclusion of other remedies not strictly hygienic. After the disease has become *fully* developed, the blood changed in its qualities, and, through it, intercurrent changes of the solids have been induced, we must not, we cannot, with propriety, confine ourselves to opium alone. In the early stage, no agent is more useful, none has been found more successful. Prof. Flint having perused the paper of Dr. Henry, thought fit

to give it a trial. It was accordingly administered to five typhoid patients, but not in so large doses as were recommended by Dr. Henry. For this I cannot account, since Dr. H. so strongly insists that it should be given in large doses — from four to six grains. Notwithstanding the smallness of the quantity given, it proved successful in two cases, in one was of considerable benefit, whilst in the other two it completely failed. Had the remedy been given in larger doses, might not all the patients have recovered? Dr. Henry, doubtless, would respond in the affirmative. And might not the disease in the two last cases have been of longer standing than the two first? Prof. Flint, if I remember correctly, did not state in his lecture.

As I am wandering from the more immediate object of this essay, I must hasten on, leaving this part of my subject, it must be acknowledged, very imperfect and incomplete. It is an interesting topic, worthy the consideration of stronger minds, to whom I hesitatingly submit the foregoing remarks, in the hope that, if worthy, they may engage their attention; if unworthy, may be excused as emanations from a fancy which will be corrected in its wandering by a silent criticism.

Physiological Effects of Opium. — The diversity of opinion which has long existed, and still exists, respecting the physiological and therapeutical effects of opium, renders it exceedingly difficult for a student, trusting to his books for information, to form an opinion even *approximating* to satisfaction. I shall therefore speak of its effects as coming within the range of my own experience, and within the range of the experience of those whom I believe to have most carefully and impartially investigated the subject.

The physiological effects differ according to the quantity administered. In small doses, opium accelerates the

pulse and increases the heat of the surface, produces fulness, or a *sense* of fulness, of the head, numbness, partial insensibility to external impressions, indisposition to bodily exertion, with a vague unconsciousness of, or indifference to, the scenes occurring around: and after sleep, which continues for a period varying from four to eight or nine hours, the person awakes with a sense of oppression of the brain, with thirst and dryness of the fauces, and with listlessness of both mind and body. The secretions from the mucous surfaces are all this time checked, the cutaneous transpiration increased, the renal diminished, whilst the hepatic probably remains unaffected.

By still larger doses no excitation is produced; if there be, however, it is very transitory, sedation almost immediately succeeding. According to Dr. Christison (Dispensatory, p. 681), the effects of a full medicinal dose are, in part, "bluntness of the external senses, and obscurity of the faculties of the mind, gradually passing to profound stupor; and it is rare that exaltation of the mental powers, or increased acuteness of the external senses, precedes these effects." The number of respirations is reduced, the pupils usually contracted, the muscles relaxed, the action of the heart and arteries diminished, and the whole cutaneous surface not unfrequently bathed in perspiration, though usually only covered with moisture; the last effect being, according to my own experience, invariably followed by a diminution in the frequency of the heart's contractions.

It is desirable, but it would not, perhaps, be expedient, to analyse more carefully the effects of opium upon the different systems and organs of the body. A few observations must suffice.

On the nervous and vascular systems it is excitant in small doses; in full medicinal doses, it is sedative or depressant.

On the muscular tissue it evidently produces relaxation, as is manifested by the power it exercises over the uterus and bladder in arresting the pains of labor, and checking the excretion of urine; over this tissue generally, by allaying spasm and quieting the pains of contraction.

On the mucus tissue, it diminishes sensibility, and changes the action of the secreting vessels; lessening and inspissating their secretions.

On the cutaneous system, sensibility is blunted, excretion powerfully increased. "In a fatal case which I examined judicially," says Dr. Christison, "the sheets were completely soaked to a considerable distance around the body" (Persira). The degree of action upon sensibility and the skin will be in direct ratio to the quantity administered, up to a certain point. The difference in effect upon the mucous and cutaneous surfaces is, perhaps, to be referred to that close intimacy of structure and functional sympathy characteristic of the two tissues.

On the glandular osgans: The experience of the profession is not sufficiently ample or consistent to justify the assertion that opium checks or increases the secretions of these organs. In diabetes, the quantity of urine excreted is certainly diminished by opium, but whether this is owing to a direct action upon the kidneys, or to paralysis of the muscular coat of the bladder, or that close sympathetic relation which is known to subsist between these organs and the external integuments, has never been demonstrated. To stimulate the energy of the cutaneous function is one of the main palliative indications in the treatment of this disease. My own opinion, notwithstanding the weighty authority of Dr. Christison to the contrary, is that the renal secretion is diminished by opium, the reason last assigned being sufficient, in my humble estimation, to account for this effect. Says Dr. Beck, in his Materia Medica, "I have known it absolutely arrested for eighteen hours by an opium suppository."

It is said that the the biliary secretions are also checked, because of the pale color of the feces; yet Sproegel (*vide* Persira) found "the choledic ducts of animals, to whom opium had been given, filled with bile." Dr. Christison thinks the hepatic secretions are unchanged by opium, or "inspissated merely," in consequence of its discharge being impeded. Whether this be true or untrue, I am unable from my own experience to say.

Application of Opium in Acute Inflammations.—I proceed, in the next place, to discuss the propriety of opium in various inflammations, which I propose to classify accordingly as they affect (1) the mucous, (2) the fibrous, and (3) the serous tissues.

1. *Inflammation of Mucous Membranes.* — Perhaps no remedy at all applicable to the treatment of inflammation attacking the *air passages* has met with so little favor from the profession as opium, which is mainly due, I conceive, to erroneous notions and groundless apprehensions of the action of the proposed remedy, and to mistaken views of the indications presented by the various inflammatory affections of this track. It has already been remarked that secretion, in common with the functions of organic life generally, is presided over and regulated by the ganglionic centres; that a certain normal condition of these centres is essential to the maintenance and proper regulation of the secretions; that any cause operating to the disturbance of the former, interfere with the latter; and, *e converso*, disturbance in the balance of the secretions is an evidence of nervous derangement. Now, of all the functions rendered irregular by the inflammatory and febrile processes, no one is so constantly affected as that of the secreting vessels, and this effect is the main source of danger in many of the inflammations, as laryngitis, croup, inflammatory diseases of the encephalic membranes, etc. To prevent abnormal

secretion then, or, in other words, to prevent effusion, becomes undoubtedly the main object in the treatment of such diseases. Especially is this true of those terrible maladies which are so rapid in their course, and which prove so fatal in their terminations—croup and laryngitis, and those diseases of the brain in which the most unfavorable events seem to be owing entirely to effusion. Every one will admit that if we could prevent, in laryngitis, the oedema of the glottis consequent on serous infiltration of the sub-mucous areolar tissue, we would, with tolerable certainty, thereby rescue our patient from almost inevitable death. How, and upon what principles, should we manage a case of dysentery or inflammatory diarrhea? What remedy, above all other remedies, has been found most successful in fluxes from the gastro-intestinal mucous membrane? Are the anatomical and physiological differences between the gastro-intestinal and the gastro-pulmonary mucous surfaces so great, are the symptoms given out by inflammations of the two portions so widely at variance, as to demand an observance of one set of principles in the treatment of the former, and of a contrary or widely different set in the management of the latter? Or, the principles being the same, are remedies appropriate in the one case, improper in the latter?

Besides, the morbid appearances are similar, identical post-mortem lesions being observed in an inflamed trachea that meet our eyes when inspecting an inflamed duodenum. Then what evidence can there be, what reason, that opium is hurtful in inflammation of the air passages? Not experience surely, for they who testify against it have never tried it. I wish here to correct a very erroneous notion entertained by almost all writers in regard to the effects of opium in inflammation. Say they, opium checks secretion, and therefore must do harm. It is a curious *fact*, that in the early stage of inflammation, during the first twenty-four or seventy-two hours of ordinary cases

before secretion has taken place, if opium be given in large doses secretion will be prevented. If, however, secretion has taken place, or is about to take place, opium, by relieving the morbid action going on in the part, will act as an expectorant. Indeed, it is the best expectorant that could be given in such cases.

That the *former* assertion is true will be proven by the cases which I shall take the liberty to quote from an article by Dr. Christison, referred to on a previous page; that the latter also is no less true I have the warrant of Prof. Flint, Who can gainsay the authority of two such men? an authority founded in experience, and by daily experience confirmed and strengthened.

Coryza, Catarrh and Influenza.—One day, early in my medical career, whilst reading the dry plan of cure recommended by Dr. C. B. J. Williams — which, by the way, is more intolerable than the diseases themselves— I conceived the opinion that *opium* might exert some influence over those affections, as also over others of the same tissue, the tendency of both plans being to inspissate the secretions from the inflamed surfaces. Dr. Williams, it will be remembered, insists that the patient must abstain from the use of drinks so soon as his *cold* comes upon him, or within a short period thereafter. Dr. Watson observes, "if you practice the old maxim which says, '*venienti occurrite morbo*,' you may occasionally stop a cold on the threshold, as it were, by an opiate." He then relates a case in which this remedy, having been tried by accident, operated like a charm, and alludes to several others in which it maintained its virtues. Although coryza and ordinary catarrh are not, strictly speaking, of an inflammatory nature, I shall nevertheless speak of them after the manner of our nosologists; and it may, practically, be well enough to do so, as catarrh without fever demands as much consideration, and is often at-

tended by symptoms as urgent, as some purely inflammatory affection about the fauces, etc.

For the following extracts, the author is indebted to an admirable paper by Dr. Christison (already referred to) entitled, "The use of Opium in Acute Internal Inflammation." I cannot do better than to quote his language. "Of such diseases there are at least four which may often be thus successfully treated without almost any other remedy, viz: coryza, catarrh, influenza, and dysentery." "For *twenty years* I have been accustomed to see it (coryza) stopped at once by a full opiate given on the first day of its appearance. Let the patient avoid food after dinner, use liquid sparingly, take a full dose of muriate of morphia, or Bartley's solution, at bed time, and breakfast before getting up next morning, and he will then commonly find the secretion from the nostrils permanently inspissated, and the complaint either gone entirely, or, at any rate, no longer a source of particular annoyance." His treatment of catarrh, either with or without fever, and of the influenza, consists in much the same mode of procedure, though in febrile or inflammatory catarrh, he usually substitutes for morphia or Bartley's solution, the Dover's powder. The treatment should not be delayed, if possible, beyond forty-eight hours from the commencement of the disorder.

Acute Tonsilitis—I again avail myself of Dr. Christison's admirable paper. "When I saw her, on the fourth day of the disease, the tonsils, greatly enlarged, especially on the right side, blocked up nearly the whole throat. * * * * * A large blister had been applied to the throat, and purgatives taken freely, but without the slightest benefit. The attack seemed too far advanced to be averted. But as fluctuation could not be detected in the larger tonsil, Dover's powder was ordered as in the former case (10 grains every half hour) Sweating ensued; ere long warm drink could be swallowed with no great diffi-

culty; and when the perspiration had thus been kept up for twenty-four hours, the pulse had fallen to 64 (from 116), and the patient entirely recovered." She had previously been subject to attacks of this kind, and never, until the above plan of cure had been enforced, had she enjoyed any immunity from the disease. "This lady has never had another attack, though five years have elapsed since the one now described." Dr. Christison thinks sweating essential; it should be kept up for some time. The sweating, however, is only an indication that the opium has produced its full effects; and the continued perspiration is evidence only of the continued action of the remedy.

Pneumonia.—Considering pneumonia to be an inflammation of the lining membrane of the air vessels, which partakes more of the character pertaining to the mucous than to any other tissue, I might, with propriety, speak of the power of opium in its cure, but time, and the space already occupied bid me to hasten on. It may be remarked, however, that Dr. Christison, and other practitioners of eminence, have found it, preceded by bloodletting, to exert a positively sanative control over this disease. In my book of notes from the lectures of Prof. Flint, I find opium very highly recommended. Prof. F. does not confine its influence to the mere *assuaging* of *pain*, but asserts, with Dr. Christison and others, that it exercises some influence, direct and positive, over the inflammation itself. Some German physician, whose name I cannot now recall, has successfully treated many cases of pneumonia by chloroform. I mention this fact, derived from the lectures of Prof. Rogers, to add strength to the view which I have attempted to give of the pathology of inflammation. Since writing those portions of this essay which treat of catarrh, coryza, etc., and that in which I briefly alluded to croup and laryngitis, I have had the pleasure of hearing the principles which should

guide us in the treatment of those affections confirmed by Prof. Flint. I was not aware that any one had ever exercised the boldness to propose, much less to practice, the administration of opium in true membranous croup. I shall speak nothing more of these diseases, nor would any thing from my pen add to the virtues of a remedy pronounced good by an author so well known, and a lecturer so eminently popular, as Prof. Austin Flint.

Dysentery.—The testimony of the profession to the happy effects of opium in this species of inflammation is so harmonious as to render only a few words necessary. "Within the last few years I have prescribed large doses of opium, after blood-letting, in at least a hundred cases of acute and sub-acute inflammations of the abdomen, and always with obvious advantage" (Armstrong, art. Dysentery). "Practitioners are too much afraid of opium in inflammations, especially of the abdominal viscera." * * * * "The *quantity* of opium should never be considered in such cases, but only the *effect*. It must be given so as to subdue pain and irritation, whatever be the magnitude of the dose." (Dr. Johnson). "Were the same cases again placed under my care [cases he had met with during the epidemic in Dublin, in 1818], I would not hesitate to give opium in doses of four or five grains, as it was the opium chiefly which seemed to me to arrest the progress of the inflammation." (Stokes, art. Dysentery). The opium had been given in combination with calomel, preceded by venesection. "In severe epidemic dysentery, as it occurs in this country, the cure, when early begun, may be commonly trusted, if I may rely on my own experience, to opium, not used, however, 'with caution,' but given boldly and often." (Christison, in journal referred to on page 281). 'With caution' refers to what Dr. Persira says of the ill-effects of large doses of opium in dysentery. In his lecture on dysentery, Prof. Flint insisted that opium might be given during the 24

hours in quantities ranging from five to fifty grains, provided the symptoms were of so urgent a character as to demand heroic treatment. He related a very interesting circumstance bearing directly upon that portion of this essay in which I have spoken of the connexion existing between fever and inflammation. There were in a certain alms-house — I suppose, in Buffalo — a great many persons crowded together; the rooms were poorly ventilated; during one season dysentery prevailed among the inmates, whilst in another season they were scourged with some form of continued fever. It is the opinion of Prof. F. that the specific cause in both cases was doubtless the concentration of human effluvia. I shall not comment on this singular coïncidence, it speaks for itself.

2. *Inflammation of Fibrous Tissue.—Rheumatism* is essentially an inflammation of the fibrous tissue, yet we should err in considering it a mere local affection. Metastasis from the joints to internal organs is by no means rare, pericarditis or endocarditis being usually the result. It is practically of no importance to determine whether the joints or cardiac membranes be primarily affected, for the disease, being constitutional, may attack one or the other alternately, or both at the same time; and the only difference in the treatment of the two arises from the greater violence in the symptoms in the heart disease, and from the paramount importance of the organ inflamed. Colchicum has been, or was, the most lauded internal remedy for rheumatism, but I think it more appropriate to the gouty than to the acute articular form. Opium was introduced to the notice of the profession by Dr. Hope, and of its efficacy he was informed, so says Dr. Watson, by Dr. Chambers. The opinion entertained of its value, by that distinguished writer, has been concurred in by Drs. Graves, Stokes, Corrigan, and a host of others on both sides of the Atlantic.

In the management of acute rheumatism, Dr. Christison orders, after the pretty copious abstraction of blood, ten grains of Dover's powder every half hour. It is necessary, as would appear from the negative evidence furnished by several trials, that the powders should be given immediately succeeding the withdrawal of blood, lest, otherwise, the circulation recover its previous degree of excitement. The other conditions of success are as follow: that "the treatment shall be enforced before the close of the fourth day, but earlier if possible; that the case shall be one of real acute rheumatism, not of the sub-acute or gouty form." This plan is quite similar to that pursued by Dr. Armstrong, who, however, used the pure opium, instead of the Dover's powder. It was the practice of Drs. Corrigan and Griffin to prescribe opium in one or two grain doses every second or third hour, "to be increased both as to quantity and frequency until there is decided relief, and kept at that dose, that is, the quantity to which it has been increased, until the complaint is steadily subsiding."

With respect to the comparative merits of opium and Dover's powder, I adopt the opinion expressed by Dr. Holland, in his Medical Notes and Reflections. Opium is almost always to be preferred. If we wish to combine ipecac with opium, it will be best to do so without the intervention of the sulphate of potassa, for that substance being inert, or, at any rate, of no explicable virtue, the quantity of Dover's powder required to produce the effects of a given dose of opium, say five grains, will constitute a mass too large and inconvenient for a single administration. Besides, whatever does no good may do harm.

3. *Inflammation of Serous Tissue.*—This article will be devoted exclusively to the elucidation of the opium treatment of peritonitis; for whatever is applicable to peritonitis may, *cæteris paribus*, be applied in the treatment of inflammation of the serous tissue in other parts of the

body. It was my intention to have remarked briefly upon opium in pleurisy and arachnitis, but time and space forbid. It may be observed, however, that many distinguished practitioners, among whom I may reckon Prof. Flint, have shown, by their experience, that opium may be safely relied on in the treatment of the former; whilst it has been strongly recommended in the latter, by not a few of the most eminent of French physicians.

Having been made acquainted with the pathology of enteritis, regarding it, in a majority of instances, as an inflammation of the serous coat of the intestines, we should expect, by parity of reasoning, that the remedy most successful in its cure would be most appropriate in the treatment of peritonitis, which, as its name implies, is an inflammation of the lining of the abdominal cavity. Now, in enteritis, opium is our sheet anchor. Purgatives in both diseases are going out of fashion, to use a homely phrase, and opium is becoming more popular the more frequently it is properly used. The pamphlet put forth by Mr. Bates, of Sudbury, England, illustrative of the good effects of opium in peritonitis, seems to have made a strong impression on the minds of a few of the profession. Sometime *after* the publication of this pamphlet, I believe, Dr. Stokes related several cases of peritonitis from perforation, treated by Dr. Graves, with marked benefit, in some cases, in some again with absolute success. It was remarked of the condition of some of these patients, that the powers of life were so feeble that blood could not be abstracted, nor could mercury be trusted, through fear of exciting the peristaltic movements of the intestines. Opium seemed to be the only remedy indicated, and happily did it justify his anticipations. Is it not strange that physicians of the present day deny that opium can be relied on in the treatment of inflammation? If it be capable of relieving one of the most fearful and terrible maladies

which has befallen the human race — peritonitis from perforation — is it unsafe to assume that the simple and uncomplicated variety may yield to its virtues?

Dr. Armstrong placed great confidence in opium, although he combined it with calomel, and drew blood previous to their administration. Such was the practice of our distinguished fellow-countryman, Dr. Post, long before the publication of Dr. Armstrong's works. The unvarnished narration, by Dr. Watson, of the case of Middlehurst, the tailor, is deserving the most serious attention. He had sporadic peritonitis. Blood-letting and calomel had both been vigorously employed, but without any appreciable good effects. So soon, however, as five grains of opium, in combination with calomel, were taken, the patient fell asleep, and "slept during the greater part of the night. Next morning his countenance had lost, in a great degree, its expression of anxiety; his belly was less tender, but still tense; and his tongue clean." Under the opium treatment the patient eventually recovered. And what is most conclusive, he grew worse whenever the opium was for a time withheld. With this case before us, we cannot avoid ascribing to opium an equal, if not the greater, share in the cure.

Dr. Churchill says, speaking of the use of opium in combination with calomel, "that the benefit of the opium in this combination, is not confined to the prevention of intestinal disturbance, but (that) it exerts a positive and beneficial influence upon the inflammation." "When the calomel acts on the bowels it may be omitted, and the opium alone continued; and I have seen as much benefit from it alone as from the calomel. Some years ago I saw a case of puerperul peritonitis, in consultation with a friend, and we administered large doses of opium (one grain every hour), with the greatest benefit. Since then, several similar cases have occured to me (Midwifery, p. 488, 1851, edition by Condie). Omitting the

vast accumulations of testimony which might be introduced in proof of the efficacy of opium in peritonitis, I conclude this already lengthened essay with a summary of the minutes which I noted from a lecture delivered in Bellevue Hospital, New York, February, 1852, by Prof. Alonzo Clark.

First Case.—First day—Announced by a chill; pulse 120, skin hot, tongue clean, respiration thoracic, abdomen tympanitic. Dr. Smith, of Bellevue, gave, according to Dr. C.'s instructions, ten minims of Magendie's solution of the sulphate of morphia.

2d day—Pulse 120, skin still hot, tongue not quite so clean, respiration thoracic, abdomen more tympanitic, vomiting of a greenish stuff like bile. One grain sulph. morphia every hour. Pulse slightly reduced.

3d day—Symptoms of second day still continuing; 1⅓ grs. morphia every hour. Slight narcotism induced; pulse fell to 90, the respiration to 7; vomiting continued, but the greenish color disappeared so soon as narcotism came on; 3 grs. of opium are now ordered every hour. The effects were, deeper narcotism, disappearance of the tympanitis and tenderness, fall of the respiration to 5; vomiting still persistent.

4th day—Diminished doses of opium; one grain every two hours, continued for four days. Surface moist, tongue slightly furred, no tenderness, no tympanitis. After the eighth day a dose of oil was given. The lochia were checked before the attack; at its commencement the milk secretion. For the first four days the patient averaged four grains of opium every hour.

Second Case.—Forty minims of solution of sulph. morphia was given the first hour; ½ drachm every hour until the fifth; sixth hour, 20 minims of the solution; from the sixth hour gradually increased to 24 grs. of opium; thus, in the following ratio, 6 grs., 7, 9, 11, 12, 16, 20, 24.

The dose was then diminished to 12 grs. The reasons for this were, that the respiration was only ten, the pulse reduced from 160 to 115, breathing became stertorous, and the mind wandering. So soon as the patient recovered from her mental aberration, 6 grs. of opium were administered. The symptoms increasing in severity during the second day, the quantity of morphia given was gradually carried to three drachms of Magendie's solution, equal to 30 grains of opium, having been preceded for three previous hours by 2½ drachms, or 25 grs., of opium. After this there was considerable vascular excitement; the pulse returned to 160, but, according to Dr. Clark, this effect was not due to the opium, for *it* has no tendency either to produce or to increase vascular excitement. It was remarked that when the skin was dry the patient became delirious, but when the surface became moist consciousness and the senses returned. Lactucarium was then substituted for opium, but in a short time the latter was again resumed, and continued in short doses until the sixth day, when all the symptoms of the disease passed away. On the seventh the patient had a spontaneous alvine evacuation, and the secretion from the uterus returned. The milk secretion did not appear until some time afterwards.

These were both cases of puerperal peritonitis; the second inordinately severe and unfavorable. Both were treated by opium alone; both terminated well. It is to be regretted that this report is not more ample and correct, for, as presented in these pages, it conveys but an imperfect and partial account of the line of treatment pursued by that distinguished physician. Let my apology for this report be found in an earnest desire to advance what he has convinced the author to be the proper method of managing this formidable complaint, a desire which I could never so fully realise otherwise than by transcribing

to paper that which he so eloquently presented to his class by oral dissertation. Prof. Clark has been more successful in the treatment of peritonitis t han any physician whose experience is on record. At the time he delivered the lectures to which I have referred, he had successfully managed eight cases out of nine of sporadic peritonitis. From the 10th October, 1851, to the 21st February, 1852, eleven cases of puerperal peritonitis had occurred in Bellevue. Three, who died, were not seen until the third day of the disease, and should not, therefore, be reckoned among those who secured *full* treatment. Of the remaining eight who were visited on the first day, two died, but both of them had inflammation of the uterus conjoined with the peritonitis. Six recovered. We may then say that all the cases of true peritonitis that were seen on the first day terminated favorably. Whether allowances be made for the lateness of the hour at which the three first cases were seen, or for the inflammation of the uterus, which occurred in two, it must be admitted that the success which Dr. Clark has obtained by the opium treatment is greater than has ever attended any other mode of practice.

I shall merely mention, without going into the particulars, a most violent and unpromising case of traumatic peritonitis, supervening in consequence of a gun-shot wound in the abdomen, which was successfully treated by Dr. W. Cooke, formerly of Nicholasville, Ky., with large quantities, oft repeated, of the tinctura opii. The patient was robust and plethoric, addicted to intemperance, and, at the time of the reception of the injury, was in a state of intoxication. The same physician succeeded in restoring to health, by like means, a negro woman, afflicted with puerperal peritonitis, who was, in the opinion of an intelligent medical gentleman present, on the very verge of the grave. The author may be excused for alluding to

these two cases, on account of the scarcity of evidence which we possess of the virtues of opium alone in the treatment of such diseases.

Modes of Administration.—They may be arranged under four distinct heads, according to the object to be effected, and to the condition of the system at the time of administration.

1. *Opium alone.*—It has frequently been observed in these pages that irritation is the first and chief element of inflammation; or, as Prof. Rogers has remarked, it is the first link in the chain of phenomena constituting this morbid affection. By quieting this irritation opium removes, so to say, the prop of the disease, it nips the inflammation in its budding. This is the mode, and this the stage, in which opium especially manifests its virtues in controlling inflammation.

2. *Opium after Venesection.*—After the inflammation has become fully developed, irritation having been succeeded by morbid changes in the vascular system, we cannot, with so much certainty or confidence, rely upon opium exclusively. The lancet may be called in to subdue the inflammation, and opium administered afterwards to prevent its rekindling. The lancet produces sedation of the system, which is maintained by the opium. In both this and the preceding case the opium must be given in large doses.

3. When the lancet cannot be used on account of prostration, feebleness of the system, etc., opium may be given to sustain the flagging powers until the morbid action has passed off or exhausted its venom. This practice is especially recommended in inflammations arising after hemorrhages, in the course of debilitating fevers, and in such inflammations of the abdomen as require perfect repose of its contents.

4. *Opium in combination.*—In this way it is applicable to all stages of acute inflammation. The articles with which it is usually associated are, tartrate of antimony and potassa, mercury and ipecacuanha. Thus combined it is generally administered in moderate doses. It is supposed that the ipecacuanha, the mercury, etc., counteract the stimulating effects of the opium, whilst the latter the more readily insure the constitutional effects of its associated remedies.

REVIEWS.

Art. III.—*Principles of Human Physiology, with their chief applications to Psychology, Pathology, Therapeutics, Hygiene, and Forensic Medicine.* By William B. Carpenter, M. D., F. R. S., F. G. S., Examiner in Physiology and Comparative Anatomy in the University of London, Professor of Medical Jurisprudence in University College, etc. Fifth American from the fourth and enlarged London edition, with three hundred and fourteen illustrations. Edited, with additions, by Francis Gurney Smith, M. D., Professor of the Institutes of Medicine in the Medical Department of Pennsylvania College, Lecturer on Physiology in the Philadelphia Association for Medical Instruction, etc. Philadelphia, Blanchard & Lee, 1853: 8 vo., pp. 1091.

Few works have obtained, in this country, greater popularity than the above treatise of Dr Carpenter, and the present edition will fully sustain its high reputation as one of the clearest, most philosophical, and most practical works extant on the subject. It affords precisely what the student of physiology wants, a faithful view of that science as it now stands. The author has so far modified and enlarged the present edition, that it may be considered in the light of a new work, "the old material having been incorporated with the new, rather than the new with the old." In order that the reader may see

how far it has been reconstructed, we copy from his preface an outline of the changes which have been made:

Considering it extremely important that his readers should have a clear idea of the sense in which the terms *law* and *cause* are subequently employed, he has devoted a few pages of the *Introduction* to an explanation of his views upon these points, and he hopes that he may be there found to have thrown some light upon the philosophy of causation, which may be of assistance to other scientific inquirers.

In order to make room for a portion of the new matter which he desired to introduce into the treatise, he has felt it necessary to omit all those references to the structure and vital actions of the lower animals which had not an immediate and direct bearing upon human physiology; and consequently, of the first chapter of the previous editions—"On the Place of Man in the Scale of Being"—he has only retained so much as related to the characteristics that distinguish man from the mammalia which most nearly approach him. The succeeding chapter, which treated "Of the Different Branches of the Human Family, and their Mutual Relations," has been extended in all that relates to man, and curtailed in that which rather belongs to Comparative Physiology, and has been transferred to nearly the end of the volume, which the author considers to be now the more appropriate place for it.

The second chapter of the present edition, comprising a general view "Of the Chemical Components of the Human Body, and the Changes which they undergo within it," is now for the first time introduced. Several new views will be found in this chapter, which have occurred to the author during its preparation; he would especially point to that of the respective relations of fibrine and albumen to the nutritive processes, and of the former to the gelatinous tissues; and to the general summary which forms the last section, in which the discoveries of M. Cl. Bernard, in regard to the elaboration of sugar and fat in the liver, are placed, he believes, in a somewhat novel aspect.

From the consideration of the chemical components of the organism, and of the participation of chemical forces

in its operations, it seemed natural to pass on to that of "The Structural Elements of the Human Body, and the Vital Actions which they Exhibit,' which forms the subject of the third chapter. Nearly the whole of this chapter, which includes the general doctrines of cell-formation and of vital force, in their application to human physiology, appears for the first time, in this edition.

Passing on to the more detailed survey of the constituent parts of the human body, the first place seemed to be claimed by the blood, the "physical characters, chemical composition, and vital properties of which are treated of at some length in Chapter IV. This portion has been greatly extended, and almost entirely re-written; the great importance of the subject, in its bearings on Pathology as on Physiology, having been constantly kept in view.

The fifth chapter, "On the Primary Tissues of the Living Body, their Structure, Composition, and Action," is essentially the same with the third chapter of the previous edition; but a large amount of new matter, in great part supplied by the elaborate "Mikroscopische Anatomie," of Professor Kölliker, has been incorporated in it; and many new illustrations, chiefly derived from the same source, have been introduced. The account of the vital endowments of the muscular and nervous tissues, previously contained in other chapters, has been transferred to this, so as to make it embody a complete sketch of those physiological actions of these separate parts of the organism, which are afterwards to be considered in their relations to each other.

In conformity with the opinion expressed by some of his friendly critics, and by many teachers of Physiology, the author has reversed the previous arrangement of the chapters which treat of the functions in detail; those relating to the organic functions being now placed *before* those in which the animal functions are described instead of *after*. This has involved a new distribution of much of the matter which was previously treated in a connected form in the chapter on the "Functions of the Nervous System," since it has appeared to the author very desirable that the whole group of actions whose aggregate makes up each function, should now be considered in its

connexion, and thus the movements of deglutition, respiration, etc., not having been explained, as was formerly the case, in the earlier part of the volume, are described, and their connexion with the nervous system examined, under each separate head. As their general relations to the nervous system are previously explained, however, in the sixth chapter, the author does not apprehend that any inconvenience will be experienced from this alteration.

The series of chapters on the several organic functions remain essentially the same as in the previous edition; but important additions and corrections have been made in every one. Thus, in Chapter VII., "On Food and the Digestive Process," the whole subject of Food is much more fully discussed than heretofore; and the most important of the results obtained from the study of the digestive process by Frerichs, Bernard, and other experimenters, have been embodied in the account of it. In Chapter VIII., "On Absorption and Sanguification," the structure and development of the Ductless Glands have been more fully described, in accordance with the researches of Kölliker, Sanders, Ecker, Gray, and others, and their relation to the process of sanguification more clearly elucidated. In Chapter IX., "On the Circulation of the Blood," the causes of the heart's sounds have been more fully considered; a view of the nature of its rhythmical contractions has been suggested, which the author believes to be original; and the most important among the results of Prof. Volkmann's elaborate researches on the dynamics of the movement of the blood have been introduced. In Chapter X., "On Respiration," the most important additions to the first section are those which embody the results of Dr. Hutchison's inquiries on the movements of respiration; to the second the data furnished by the researches of MM. Regnault and Reiset, Prof. Scharling, M. Barral, and others, upon the amount of oxygen absorbed, and of carbonic acid exhaled; whilst the third, in which the "Effects of Suspension or Deficiency of Respiration" are discussed, has been largely augmented by a summary of the evidence afforded by our recent experience, of the marked tendency of an habitually imperfect respiration to produce a liability to zymotic disease. Nearly the whole of Chapter XI., "On Nutrition," has been newly written for this edition. In Chapter

XII, "On Secretion and Excretion," important additions have been made under almost every head; and those parts, especially, which relate to the agency of the excretory apparatus in maintaining the purity of the blood, have been extended. This chapter, however, is less comprehensive than formerly; several of the subjects which it previously included having been tranferred to portions of the work in which they seemed to find more appropriate places; the salivary and pancreatic secretions being now treated of in the chapter on Digestion, and those of the testes and mammæ in that on Generation. Of the three subjects included in Chapter XIII., "On the Evolution of Heat, Light, and Electricity," the first alone had been systematically considered in the previous editions, and this has been considerably extended in the present. Under the second head will be found some very curious observations on the evolution of light in the living human subject; and under the third is given a summary of the admirable researches of M. Du Bois-Raymond, which have been recently brought before the scientific public in this country by Dr. Bence Jones.

It is in the chapter (XIV.) devoted to the Functions of the Nervous System, which constitutes one-fifth of the entire volume, that the greatest additions and alterations will be found. This subject, in its Psychological as well as in its Physiological relations, has occupied more of the author's attention than any other department of Physiology; and he now offers the more matured fruits of his inquiries and reflections, with some confidence that, even if his views should hereafter require modification as to its details, they will be found to be fundamentally correct, and to furnish materials of some value in Psychological inquiry, as well as in the study of Mental Pathology. * * The peculiar states which are known under the names of somnambulism, hypnotism, mesmerism, electro-biology, etc., are all considered in their relations to sleep on the one hand, and to the ordinary condition of mental activity on the other; and the author ventures to believe that he has not only succeeded in throwing considerable light upon the nature of these aberrant forms of psychical action, but that he has been enabled to deduce from their phenomena some inferences of great importance in Psychological science.

In Chapter XV., "On Sensation, and the Organs of the Senses," comparatively little change has been made; several additions have been introduced, however, and some corrections made. The next chapter (XVI.), "On Muscular Movements," has been entirely remodelled; the portion which relates to the vital endowments of muscular fibre having been removed to Chapter V., Section 6, and its place supplied by new matter, which contains many original views, especially under Section 4, which treats of the "Influence of Expectant Attention on Muscular Movements." Comparatively little alteration has been found necessary in Chapter XVII., "On the Voice and Speech," or in Chapter XVIII., "On the Influence of the Nervous System on the Organic Functions;" an important addition has been made to the latter, however, with reference to the influence of the state of "expectant attention" on the operations of nutrition, secretion, etc.

The additions and alterations which have been made in Chapter XIX, "On Generation," will be found to be both numerous and important, especially under the section on the "Development of the Embryo," which has been almost entirely re-written, so as to bring the view of this process more into accordance with the existing state of our knowledge of it. The author has not felt it expedient, however, to enter into minute details upon this subject.

In Chapter XX., "On the Different Branches of the Human Family, and their Mutual Relations," all that directly relates to this subject has been considerably extended, and many novelties have been introduced; whilst those arguments for the specific unity of the human races which are derived from the analogy of the lower animals, have been simply referred to, having been fully dwelt on by the author elsewhere.

The closing chapter, "On Death," has been almost entirely written for this edition, the subject having been only touched on incidentally in the preceding.

Of the manner in which Dr. Carpenter applies physiology to the illustration of pathology we have an admirable example in the second chapter of his work. It has

reference to diabetes, which was long regarded as a disease of the kidneys. Bernard has shown that sugar is a normal constituent of the liver; that it is found in that organ whether the food of the animal be farinaceous or saccharine, or not; that it is susceptible of being formed out of the protien compounds. If from any cause an excess of sugar be generated, it must appear in the urine, the combustive process not being adequate to its consumption. Hence, we are to look rather to the liver than the kidneys for the origin of diabetic sugar. In the liver of a diabetic patient, Bernard found no less than 833 grains of sugar. The liver, in this disease, seems to exercise its metamorphic power upon the azotized constituents of the blood, and thus to destroy the material for the nutritive processes. This affords an explanation of the rapid wasting in diabetic subjects, notwithstanding that the appetite may be good, and large quanties of food taken.

This agency of the liver in converting all articles of food into sugar, appears to be influenced by the conditions of the nervous system. When the upper portion of the medulla oblongata is irritated, the production of sugar is increased to a great extent; an artificial diabetes is induced, which continues for a short time. This change in the character of the urine has been brought about in twenty minutes by this operation. If the lesion be too great, instead of an increase in the saccharine secretion, it is entirely suspended.

In a healthy state of the system the sugar developed is converted into lactic acid, and is eliminated by the lungs, an evolution of heat being the result. But notwithstanding the great amount of sugar, and its speedy conversion into carbonic acid, in the experiments of Bernard it was found that the temperature of the animals rapidly declined. This last fact, our author remarks, appears to stand in marked opposition to the chemical theory of

animal heat; but he proposes the following explanation which removes the difficulty:

The production of heat being dependent upon the combustion (or union with oxygen), not merely of carbon, but of hydrogen, and the amount of heat disengaged by the combustion of hydrogen being much greater than that given off by the combustion of its equivalent of carbon, we might expect that the conversion of a fatty substance which is almost entirely composed of hydrogen and carbon, into water and carbonic acid, shall give off a far larger amount of heat than the combustion of a farinaceous or saccharine substance, in which there is only carbon to be burned off, the hydrogen being already united with oxygen in the proportion to form water. Experience shows that such is the case; for in the Arctic regions, ordinary bread is found to be very inefficient for the maintenance of animal heat, although an ample supply of oleaginous matters is completely effectual for this purpose; and, as Sir John Richardson has informed the Author, it has been recently found by the Hudson's Bay traders, that *maize* bread, which contains a considerable proportion of oil, is a most supporting food. Consequently, when the production of *fat* by the liver is suspended, and the production of *sugar* takes place, the amount of heat generated by the consumption of even an augmented quantity of the latter, will not be equal to that resulting from the combustion of the former; for only carbon will be burned off in the one case, whilst both carbon and hydrogen were consumed in the other.

We subjoin the general summary of the author at the end of this chapter, in which a synopsis of his views on several important points are presented:

We have now passed in review the chief among those components of the Human body—whether presenting themselves in its nutritive fluids, in its solid tissues, or in its excretory products—whose existence has been made definitely known by Chemists. It is by no means to be assumed that what has here been stated affords a complete

list of the chemical components of this fabric; still less, that the account which has been given of the metamorphoses they undergo is to be received in the light of a determinate scheme. We should, indeed, regard it as a mere sketch or outline, in which the broad features are conveyed with tolerable distinctness, but of which the details remain to be filled in by careful study. And the greatest advantage which can be derived from this method of viewing the subject, consists in the more definite boundary we are enabled to draw between what is known and what is unknown; and again, between what rests on a fair basis of probability, and what has no better foundation than vague surmise. Moreover, there is an obvious advantage in combining the *chemical* and the *physiological* view of the facts in question. For the mere Chemist will not only be liable to continual error, when he attempts to reason as to what takes place in the *penetralia* of the living body from what he observes in his laboratory, without taking into account the difference in the conditions of the phenomena (of which kind of error some of the speculations of Prof. Liebig have afforded remarkable examples); but he will also be at a great disadvantage in the prosecution of his inquiries, for want of the guiding clue which physiological knowledge alone can afford. On the other hand, the Physiologist cannot safely make a step in advance, when engaged in the study of the metamorphoses of the alimentary materials into the living solids, and of the subsequent reduction of the latter to the condition of excrementitious matters, without relying on those exact data which Chemical tests and analyses can alone supply; it being to these, in fact, that he owes whatever definite knowledge he possesses of the composition of these several bodies, with which it is of the most fundamental importance that he should be acquainted. Accordingly, all the most productive researches of recent times, in this department, have been the work of men, who have either combined within themselves these two kinds of knowledge, or who have brought them to bear upon one another from extraneous sources.

The following Summary is intended to convey, within a narrow compass, the leading conclusions, in regard to the Chemistry of the living Body, to which the Chemico-physiological labors of recent times appear to point.

I. The organic materials indispensable for the *genesis* of Tissue, consist of *Albuminous* and *Fatty* compounds. The former present themselves under various aspects, in the Vegetable as well as in the Animal kingdom, all being reducible, however, to the ordinary state of Albumen by the digestive process; and in their natural states of combination, they include most of the inorganic substances which are acquired in addition. There is no reason whatever to believe, that Albuminous compounds can be generated within the animal body, by the transformation of substances belonging to an entirely different type. The latter are directly afforded by ordinary animal food, and by many kinds of vegetable productions; and it seems to be when they are thus supplied, that they are most readily made available in histogenesis. They may be produced within the body, however, by the metamorphosis of either Albuminous or Saccharine compounds.

II. The great mass of those tissues of the body which belong to the *cellular* type, is generated at the expense of Albuminous matter; fat-particles, however, being intimately blended with this in an early stage of their formation. Of this we have a notable example in the case of Muscular tissue; but the cell-walls of all other textures would be found, if they could be entirely freed from their contents, to have the same composition. Even if they be altogether *chemically* identical, however, the molecular condition of the particles composing the amorphous coagulum and the living cell must be entirely different; and the latter exhibits distinctive *vital* properties, in virtue of the organizing process to which its material has been subjected. Not merely the cell-walls, but the cell-contents of these tissues (with the exception of those concerned in the act of excretion), seem to be derived from the Albuminous or from the Fatty constituents of the blood; this seems clear, for example, in regard to the globulin and hæmatin of the red corpuscles of the blood, and the horny matter of the epidermis and its appendages, which must have their source in the former; and also with respect to the contents of the adipose and nervous vesicles, which must be drawn wholly or in part from the latter. Whether, in the construction of the tissues of this class, the Albumen of the blood may serve directly as the *pabulum* for the production of cells, or whether it must needs pass

first through the condition of Fibrin, cannot be distinctly affirmed; there is no positive evidence in support of either proposition; but the probabilities appear to the Author, on the whole, to favor the former view.

III. The great mass of the gelatigenous tissues of the body, whose texture is *simply fibrous*, is also derived from the albuminous element of the Blood; but this passes through the intermediate condition of Fibrin, which may be regarded as a substance endowed with the power of self-development into a low form of organized structure, and therefore as having already undergone a vitalizing influence. There is no sufficient reason to believe that Gelatin employed as food can ever be applied even to this purpose in the body; since all that we know of the *genesis* of the simple fibrous tissues indicates that, in assuming their characteristic structure, they pass through gradations similar to those which we witness in the production of the adventitious tissue of fibrinous exudations.

IV. When the death and disintegration of the tissues again bring their components under complete subjection to Chemical forces, an entirely different series of metamorphoses takes place, tending to degrade these components towards the condition of inorganic compounds. They would seem to resolve themselves into two classes of substances;—on the one hand, saccharine, oleaginous, and resinous matters, analogous to those of plants, in which carbon predominates;—on the other, a set of compounds peculiar to animals, of which nitrogen is the characteristic ingredient. From the albuminous constituent of muscle, for example, there is direct evidence that fat, sugar, and lactic acid may be generated on the one hand; on the other, creatine, and (probably through this creatine) urea, with the rest of the highly-azotized components of the urinary excretion. The sugar generated by the agency of the liver, from the products of the waste or disintegration of the system that are contained in the blood, seems to be at once employed in supporting the combustive process by which the animal heat is maintained. The fat may be directly applied to the same purpose, or may be stored up in the cells of Adipose tissue for future use. The peculiar resinous acids of the bile, which are probably formed from the same source, appear to fulfil, in part at least, a similar

destination, after having been made subservient to other purposes. The lactic acid, chiefly generated in the substance of the muscles (probably by the metamorphosis of a saccharine compound, which may be looked on as the immediate product of their disintegration), is in like manner destined to be carried off by the respiratory process, though a part of it may first be rendered subservient to the digestive operation. But if the respiratory process should not be sufficiently active to remove these highly-carbonized compounds from the blood, we may find the lactic and hippuric acids in the urine, with the addition of carbonaceous pigmentary matter. On the other hand, the highly-azotized substances are destined for immediate elimination by the kidneys; their presence in the current of the circulation being so hurtful, that even a small amount of accumulation might induce fatal results.

V. Besides the foregoing substances, there are doubtless others which have not been so carefully studied, and which are passed off by distinct channels. Thus, we have no precise knowledge of those products of disintegration which are thrown off by the skin; and the proper fecal matter, which is undoubtedly derived from some excretion poured into the alimentary canal, rather than from putrescent changes in the residue of the substances which are passing through it, has not yet been made the subject of accurate examination.

VI. Where more alimentary matter is introduced into the blood than is required for the *genesis* of living tissue, this probably undergoes the same decomposing changes, as do the effete matters that are set free by the disintegration of the organized fabric. The saccharine and oleaginous matters are directly carried off by the combustive process, only that portion being applied to the production of adipose tissue which may not be required for the maintenance of the temperature of the body; whilst the albuminous and gelatinous appear to be resolved into the two classes of compounds already indicated, part of which are eliminated by the liver and lungs, the other part chiefly by the kidneys, but also by the skin and (its internal reflexion) the alimentary canal. It may here be mentioned, as an additional evidence of the production of sugar from albuminous compounds within the living body, that it is found in the milk of Carnivorous animals,

which have been for some time restricted to a diet of animal flesh.

VII The Inorganic acids, bases and saline compounds, which properly rank as constituents of the body, are for the most part applied to its construction in the forms in which they were introduced from the food; and they reappear under the same forms in the excretions. But new compounds are also produced during the progress of the metamorphic changes already referred to. Thus, a portion of the sulphur taken in as a constituent of albuminous food, seems ty be oxidised in the final disintegration of the tissues by which that albumen was appropriated, and is converted into sulphuric acid; a part, however, still remaining unoxidized, and passing off in that state, both by the bile and the urine. So, again, if phosphorus (as such) be a constituent of the protien-compounds. or be united with fatty matters, it must undergo a similar oxidation within the system; as it scarcely ever presents itself in the excretions under any other form than that of phosphoric acid. On the other hand, by the oxidation of various organic acids largely contained in vegetable food, their alkaline bases are reduced to the state of carbonates, so as to be ready to combine with any of the stronger acids that may be present in the system; and ammonia seems also to be generated *de novo*. Thus a supply of bases is prepared, ready to neutralize not merely the acids w.ose mode of production has just been described, but also the uric, hippuric, and lactic acids which are generated within the body, and which do not readily pass off from it except in combination with bases; and according as the proportion of these bases is equivalent to that of the acids, exceeds it, or is exceeded by it, will the urine be neutral, alkaline, or acid.—When mineral substances, whose presence is superflous or noxious, are introduced into the body, an effort is usually made for their elimination, by some of the excretory organs; most commonly by the kidneys.

There is very strong evidence that, in all these transformations Chemical forces are alone concerned; this evidence arising, on the one hand, from the nature of the changes themselves; and, on the other, from the certainty that such forces *must* be in operation, and that their effects will be mod fied by the peculiar conditions under which

they are exerted. We have already seen that many of the changes taking place within the living body can be precisely imitated out of it, by the use of means whose actual operation is of the same kind, though the *modus operandi* may be very different. Of this a remarkable example is afforded by the process of *oxidation*, which is continually going on within the system, and which produces a most important influence on the condition of the products of its disintegration. When the Chemist desires to convert one organic compound into another by oxidation, he treats it with some substance (*e. g.* nitric acid or peroxide of lead) which readily yields oxygen; whereas, the Physiological method is altogether different, for the substance to be acted on, being diffused through the circulating fluid is exposed to the direct influence of the oxygen of the air, in a state of almost infinitely minute division, during the passage of that fluid through the multitudinous capillary channels of the lungs. Now of the efficacy of this state of subdivision, in bringing about changes which do not occur when the substances to whose attractive forces these are due are simply exposed to each other *en masse*, we have a very remarkable example in the fact that iron, when reduced from the oxide to the metallic state by a current of hydrogen gas, and thus left as a very fine powder, becomes spontaneously ignited by exposure to common air, and oxidizes as rapidly as a piece of iron-wire would do when burned in pure oxygen or immersed in nitric acid. This point has scarcely been sufficiently attended to by Chemists, who have too readily satisfied themselves with accounting for such metamorphoses by laboratory operations, without inquiring how far similar agencies could be at work within the body: and we shall hereafter find that this powerful oxidizing process is probably employed, not merely in the combustion of materials introduced into the body, or supplied from itself, for the maintenance of its heat, nor only, in addition, for the removal of some of the products of its own disintegration, but also for the decomposition and elimination of certain organic poisons, from which, when they have been introduced into the body from without, it is freed through this channel, as it is from many of those of a mineral nature through the kidneys.—Allusion has already been made, again, to the peculiar action of

ferments, which tend to produce new and simpler arrangements of the elements of organic compounds, such as no ordinary reägents could effect. And it has been also pointed out that the very same substance in different stages of decomposition may occasion the genesis of several different sets of new compounds, according to the state in which it may itself happen to be when employed for this purpose. Moreover, it has been also seen, in how very marked a degree the condition and the metamorphoses of organic compounds are effected by the presence of very small quantities of inorganic substances; but whether their influence be that of ordinary chemical attraction, or that which has been termed "catalytic" power cannot yet be positively stated.—It is to be remembered, moreover, that the circulating fluid, which is probably the seat of most of the metamorphoses, is itself in a state of constant change; that new components are continually being introduced, on the one hand from the alimentary materials, and on the other from the disintegration of the tissues; and that such a condition must be eminently favorable to the chemical metamorphosis of its organic constituents.—It may be remarked, moreover, that the mode in which *capillarity* is brought into action in the processes of nutrition, is likely to have an important influence in determining further chemical changes, in virtue of the galvanic action which may thus be set up; it having been shown by Becquerel that, if the bend of a siphon be filled with fine sand, and an acid be poured into one leg, and an alkaline solution into the other, the chemical action which ensues at their point of meeting will give rise to a galvanic current between the contents of the two legs, when these are connected by a wire passing through the open ends of the siphon. As the blood and the tissues are continually acting chemically on one another through the permeable walls of the vessels, it is scarcely possible but that electric currents should be thus generated; and it seems very probable that these may perform an important part in the metamorphoses in question.

On the whole it may be confidently affirmed, that of the changes which have been described in the present chapter, there are none—save the production of Fibrin, whose peculiarly vital properties have been already dwelt on—which there is any adequate reason to attribute to other

than Chemical agencies; for if all cannot yet be precisely imitated by laboratory processes, this imitation has been successfully practised in the case of a large number of them; and the nature of the remainder is such as leaves it by no means improbable that they too will be reduced to the same category. In treating of this subject, it would be very easy to obtain a temporary solution of all difficulties of this kind, by regarding every case not otherwise explicable as a manifestation of "vital force;" but such a method is altogether inconsistent with sound philosophy; and we have no right to call in the assistance of vital force on any other occasion than when we witness phenomena which are not only inexplicable by, but altogether inconsistent with, the known operations of Physical and Chemical forces. Phenomena of this kind will hereafter come under our consideration; but none such (with the single exceptivn just referred to) have yet fallen under our notice; the metamorphoses we have been considering being mere changes in composition, analogous to those which *have* been effected in the laboratory; and the elements alike of the original substances, and of the products of their changes, being held together by affinities in which Life has obviously no concern.—It is not here denied, however, that Vital Force has an influence upon the Chemical phenomena of the body; on the contrary, much evidence will be hereafter given, that such an influence *is* exerted, especially through the nervous system. But this agency may be considered to operate, after the manner of Electricity or Heat, in modifying the play of ordinary Chemical attractions, rather than in substituting for them a new set of "vital affinities."

The highest estimate, however, that we seem justified in making, of the play of Chemical Affinities in the living body, is applicable only to those transformations, which, on the one hand, prepare the *pabulum* for that Orgnizing process, whereon is dependent the development of *vital* properties in substances that were previously inert; and which, on the other, minister to the application of the effete matters, resulting from the disintegration of tissues whose term of life is over, to purposes that are advantageous to the system in general, or are subservient to their removal in the most effective manner from the economy, to whose operations their continued presence would be

prejudicial. Thus the reduction of all protein compounds to the condition of Albumen, in the digestive process, and the introduction of this substance into the blood in its soluble form, can be counted nothing else than a purely chemical operation. The same may be said of the conversion of starch into sugar, and of sugar into fatty matter. It may be surmised, moreover, that the production of globulin and of hæmatin from albuminous material, may be due to chemical actions determined by the vital agency of the floating cells of the blood, in the manner indicated in the preceding paragraph. And the same may be true of the change of composition (if any difference really exists), which is a part of the metamorphosis of albumen into fibrin; and of that still more decided change which subsequently takes place, when the fibrous tissues are converted, in the act of formation, into the substance which yields gelatin. For, as already pointed out, although the Chemist has not yet succeeded in imitating this metamorphosis, yet there are circumstances which indicate that such a fundamental relation exists between the protien-compounds and gelatin as leaves no right to assume that any other than chemical forces are concerned in it.

But with the changes directly concerned in the *development of living tissue*, Chemistry would seem to have nothing whatever to do. The substance of Muscle, for example is *chemically* the same with the Albumen of the blood; and the whole difference between the organized structure possessed by the former, and the amorphous coagulum formed by the latter, between the marvelous activity of the one and the passive inertness of the other, must be attributed to Vital force alone. Now it is one of the chief peculiarities of this Vital force, that it is able, so long as it is capable of being fully exerted, to resist and keep at bay the influence of those Chemical and Physical forces, which would tend, were it not for this property of the living substance, to effect its speedy disintegration and decay. Of this we have a most characteristic and apposite example, in the case of a seed that has been brought to the surface of the soil, after having been buried for a long lapse of years or centuries in the earth. Whilst it remained in complete seclusion from moisture and oxygen, and was kept at a low temperature, no appreciable

alteration took place in it; but so soon as it is exposed to warmth, and to the contact of air and water, it *must* begin to change—its passive existence giving place to a state either of growth or of decay, according as it has retained, or has lost, its vital properties. For the very agents which are most effectual in stimulating it to vital activity, and which afford the conditions, dynamical and material, whereby the seed develops itself into the plant, are those which, if the seed be no longer capable of germination, most favor its decay, reducing its organic components back to the condition of inorganic compounds. This peculiar attribute of living substances will be more fully considered in the next Chapter.

Immediately, however, that we pass the confines of Life, we reënter the domain of Chemistry; for so soon as the vital activity of the living tissues has ceased, their materials again become entirely subject to Chemical forces; and all the metamorphoses which we have been occupied in tracing out—tending, as they do, to reduce the organic compounds with which they commence, lower and lower in the scale, until these are restored to the forms of simple binary composition from which their elements were at first derived—can scarcely be regarded in any other light than as the result of ordinary Chemical agencies. Thus, then, according to the view here advocated, the Life of each part is dependent upon Chemical operations, in so far as it is by these that its nutrient materials are prepared, and the products of its decomposition are carried away; but the application which it makes of such materials to the production of new organized tissue, and the various actions which that tissue then exerts in virtue of its organization, are not only incapable of being explained on Chemical principles, but often take place in direct antagonism to Chemical forces.

SELECTIONS

FROM

FOREIGN AND HOME MEDICAL JOURNALS.

Kentucky Surgery. From the Report of Prof. Gross to the Kentucky Medical Society.—*Ovariotomy.* — To Kentucky belongs the honor of having furnished to the world the first case of extirpation of the ovary, for organic disease of this organ. This honor is justly and exclusively due to the late Dr. Ephraim McDowell, of Danville. From a paper published by this gentleman in the seventh volume of the Philadelphia Eclectic Repectory, it appears that his first operation was performed in December, 1809. It is not known, with any degree of certainty, how often Dr. McDowell repeated this operation; his published cases amount only to five, but there is reason to believe, from what I have learned from his nephew, Dr. Wm. A. McDowell, that he performed it not less than thirteen times.

During the progress of my labor, as Chairman of the Committee on Surgery, of this Society, I have, in consequence of letters addressed to various gentlemen in Kentucky, Ohio, and Tennessee, been made acquainted with the particulars of three cases more, which, added to those published by Dr. Ephraim McDowell himself, increase the aggregate to eight. It is to be deeply regretted that

Dr. McDowell did not keep a record of his operations, or communicate the results to his professional brethren. Such a contribution would not only have greatly enhanced his reputation as a bold and original surgeon, but it would have conferred an inestimable boon upon suffering humanity.

As the operations in question reflect the highest credit, not only upon Kentucky, and upon Kentucky's illustrious surgeon, but upon the United States, and as they have been mainly, if not exclusively, instrumental in directing the attention of the profession, both in America and in Europe, to a subject which has, of late years, elicited so much interest, research and skill, it is proper that I should give a brief analysis of them, in order, more especially, that the world at large may know what knowledge and science, when aided by intrepidity and dexterity, may accomplish even in a backwoods settlement of Kentucky. Dr. McDowell's first three cases are published in the seventh, and the last two in the ninth, volume of the Philadelphia Eclectic Repertory.

Dr. McDowell's *first operation* was performed upon Mrs. Crawford, of Ken ucky, in December, 1809. The tumor inclined more to one side than the other, and was so large as to induce her professional attendant to believe that she was in the last stage of pregnancy. She was affected with pains similar to those of labor, from which she could find no relief. The wound was made on the left side of the median line, some distance from the outer edge of the straight muscle, and was nine inches in length. As soon as the incision was completed, the intestines rushed out upon the table; and so completely was the abdomen filled by the tumor that they could not be replaced during the operation, which was finished in 25 minutes. In consequence of its great bulk, Dr. McDowell was obliged to puncture it before it could be removed; he then threw a ligature around the fallopian tube, near the uterus, and cut through the attachments of the morbid growth. The sac weighed seven pounds and a half, and contained fifteen pounds of a turbid, gelatinous looking substance. The edges of the wound being brought together by the interrupted suture and adhesive strips, the woman was placed in bed and put upon the antiphlogistic regimen. "In five days," says Dr. McDowell, "I visited

her, and, much to my astonishment, found her engaged in making up her bed. I gave her particular caution for the future; and in twenty-five days she returned home in good health, which she continues to enjoy."

It will not be uninteresting here to state that Mrs. Crawford, at the time of the operation performed upon her by Dr. McDowell, lived in Green county, Kentucky, from whence she removed, sometime afterwards, to a settlement upon the Wabash river, in Indiana, where she died, March 30th, 1841, in the 79th year of her age. There was no return of her disease, and she generally enjoyed good health up to the period of her death. She had no issue after the operation. Her youngest child, our worthy citizen, Mr. Thomas H. Crawford, who has kindly communicated to me these facts, was born in 1803, nearly or quite, six years before the operation.

The *second case* was that of a negress. The tumor is stated to have been very large, and so firmly adherent to the bladder and uterus as to render any attempt at extraction perfectly futile. The operator, therefore, contented himself with making a free incision into it with a scalpel, to let out its contents, which were of a thick, ropy and gelatinous character. The incision was of the same length, and made in the same situation, as in the preceding case. Upwards of a quart of blood was lost in the operation. The wound, which was dressed in the ordinary manner, healed without any untoward symptom. The woman remained well for nearly five years, when the tumor began to increase again, and in twelve months it was as large as it was before the operation.

The *third operation* was performed in May, 1816. The subject was a negro woman; and the ovarium, which was much enlarged, could be easily moved from side to side, to the left of which, however, it was adherent. Dr. McDowell made an incision into the linea alba, from an inch below the umbilicus to within an inch of the pubes, and then extended the opening towards the right side, about two inches above the former point, to afford himself more room. He next passed a ligature round the fallopian tube, and 'turned out' the left ovary, which was found to be in a scirrhous condition, and to weigh six pounds. The wound was dressed as in the preceding cases, and the woman was well in two weeks, though the ligature did

not come away under five weeks. No mention is made of the manner in which the adhesions were overcome.

Dr. McDowell performed his *fourth operation* in April, 1817, upon a colored woman, from Garrard county, Kentucky, removing a scirrhous ovary, weighing five pounds. The incision was made near the linea alba, but its extent is not mentioned. The ligature slipped from the fallopian tube, after its division, and, in consequence, a great loss of blood took place. Several arteries were then tied; but this not arresting the hemorrhage, a large ligature was passed round the whole stump of the tube, and secured in the most careful manner. Although the woman was much exhausted she happily recovered, but did not fully regain her health. "This, though the smallest ovarium I have ever extracted," says Dr. McDowell, "was much more troublesome to the patient than in any previous case. Besides experiencing severe lancinating pains in the parts, she was seldom able to discharge her urine without getting almost on her head, in consequence of the tumor falling down into the pelvis, and compressing the urethra."

His *fifth* recorded operation was performed by Dr. McDowell on the 11th of May, 1819. The patient, likewise a negress, and the mother of one child, was from Lincoln county, in this State, and was supposed by her physician to be laboring under ascites, as the tumor was very large and fluctuating. After having given her hydrogogue medicines for some time without any benefit, Dr. McDowell tapped her, and drew off thirteen quarts of thick, gelatinous fluid. The operation was repeated in two months, and it was now ascertained, after the matter was all evacuated, that there was a firm substance, of considerable size, which was evidently a dropsical ovary. Some months after this she was again tapped, and the opening was enlarged so as to admit the finger, which was freely used as a probe, that there might no longer be any doubt respecting the true character of the disease. The incision was made on the left side of the median line, down to the tumor, which was found firmly adherent to the parietes of the abdomen and to the intestines, by slender cords, which were easily separated by the hands. The ligamentous bands, attaching the tumor to the uterus, were surrounded by ligatures, after which the tumor was

opened, its contents discharged, and the sac extracted. The fluid measured sixteen quarts, and was of a gelatinous character, intermixed with a considerable quantity of hair, and a body resembling very much, in shape, the front tooth of a cow. Violent peritonitis ensued, followed by death on the third day. The uterus and right ovary were perfectly natural, and the ligatures were well applied, and not in a situation likely to injure the adjoining parts.

It will thus be percieved that, of these five cases, three were entirely successful; that one recovered, and remained well for nearly five years, when the tumor recommenced growing; and that one died from peritoneal inflammation within three days after the extirpation of the diseased mass. This success is fully equal to the average success attendant upon ovariotomy in the hands of modern operators. According to the calculations of my friend, Prof. Atlee, of Philadelphia,* founded upon an analysis of upwards of two hundred cases, the rate of mortality for the operation in question is 26½ per cent.

A highly respectable lady, Mrs. O., aged 55 years, of the neighborhood of Nashville, Tennessee, consulted Dr. McDowell, through her professional adviser, Dr. James Overton, in July, 1822, concerning a tumor in the left side of the abdomen, which she had first noticed sometime during the previous December. Being a member of a family inclined to corpulency, she paid no particular attention to it for several months, the more especially as it was free from pain or soreness. The enlargement of the abdomen continued to increase gradually, and early in the following May she felt distinctly, on the left side, and a little below the level of the umbilicus, a small globular tumor, destitute of sensibility, and movable from side to side, as well as from above downwards. About the middle of June, by which time the swelling had considerably augmented in volume, the patient was seized with pains in the back, hips and thighs, much resembing the first pains of parturition. By the use of laxatives, warm bathing and anodynes, these simptoms were subdued, and she enjoyed an interval of ease and health, until the latter part of July, when there was a recurrence of the local

* A Table of all the known operations in Ovariotomy, p. 32. Philadelphia: 1851.

distress, in a more aggravated form, with great tenderness on pressure. The urinary secretion was natural, both as to quantity and quality, and the uterus appeared to be perfectly sound. No fluctuation could be discovered at this time in the swelling; and the integuments of the abdomen were quite lax, except at the site of the enlargement, wnere they were very tense.

When Dr. McDowell visited the patient, in the summer of 1822, the tumor filled nearly the whole of the abdomen, and she had the appearance of a female in the sixth month of utero-gestation. The general health was a good deal impaired, from the absence of sleep, and the presence of fever, and there was a sense of weight and dragging in the pelvis, with acute pain in the swelling, perineum and thighs.

Supposing the disease to consist in a morbid enlargement of the left ovary, Dr. McDowell designed to extirpate it with the scalpel, and for this purpose made an incision from five to six inches in length, along the linea alba, over the most prominent part of the tumor, down to the peritoneum. Having laid bare this membrane, he proceeded cautiously to divide it, intending to make an opening sufficiently large to admit of the removal of the diseased organ. In this, however, he was disappointed; for he had no sooner made his first incision through the peritoneum, than there gushed out, in a full stream, a bloody looking serum, which continued to flow till the sac which had contained it was apparently entirely empty. The quantity thus lost was about one gallon. The edges of the wound were then approximated by several interrupted sutures, light dressings were applied, and the abdomen was encircled by a broad bandage. This constituted the whole of the operative procedure. No attempt was made, or even deemed practicable, to extirpate the diseased organ, inasmuch as it adhered so closely to the peritoneum as to render it impossible to distinguish or separate it from it. Indeed, Dr. McDowell supposed that he was dividing the peritoneum only when the knife penetrated the ovarian sac. The circumstance took him, as well as every one present, by surprise, because it was entirely unanticipated.

The wound continued to discharge matter for some time after the operation, from the lower extremity of the

incision, where a tent was kept for that object. The fluid gradually lost its sanious character, and as it diminished in quantity it assumed more and more the appearance of healthy pus. The wound was entirely healed at the end of about five weeks; and the patient, who lived from fifteen to twenty years after the operation, enjoyed excellent health; nor did she, at any subsequent period, suffer any pain or uneasiness which could be justly ascribed to disease of the ovary, or any other organ connected with the uterus.

The interest of this case is heightened by the circumstance that the late President Jackson, who was a near neighbor of the patient, was present at the operation, assisting in holding her hands, and supporting her resolution.

For the above interesting and valuable details, I am indebted to Dr. James Overton, an eminent practitioner of Nashville, Tennessee, who was present at the operation, and who had charge of the case, both before and after the operation by Dr. McDowell, who visited the patient at her own residence.

For the details of the next case I am indebted to my venerable friend, Dr. W. C. Galt, for many years one of the most successful and distinguished physicians of Louisville.

The subject of this case was Miss Plasters, of the neighborhood of this city, who was attacked, in the winter of 1821, with enlargement and pain of the right ovary. The disease gradually increased, and in February, 1823, she was tapped for the removal of the contents of the tumor. The dropsical symptoms, however, soon reäppeared, and believing that excision of the affected organ afforded the only chance of permanent relief, her medical advisers, Drs. Galt and Ragland, requested her to consult Dr. McDowell. I have not been able to obtain any information as to the age of the patient, and the size of the tumor; but from a letter written by Dr. McDowell to Dr. Galt, sometime after the operation, I learn that the enlarged viscus filled the entire abdominal cavity, and that out of nine cases that had presented themselves with this disease, up to the period adverted to, that of Miss Plaster appeared by far the most hopeless. Upon her arrival at Danville, she was so extremely debilitated that it was

believed she would hardly be able to sustain the shock of the operation.

The patient having undergone the requisite preliminary treatment, the operation was performed on the 12th of May, 1823. An incision was made into the abdominal cavity, extending the whole length of the linea alba. Finding the tumor so large that it could not be removed entire, a free opening was made into it, discharging about six pints of fluid. The morbid mass was then lifted from its bed, though not without difficulty, a ligature having been previously cast round its foot-stalk or uterine attachment. The abdominal cavity having been cleared of blood and water, the edges of the wound were carefully closed, in the usual manner, and the woman put to bed.

The omentum is said to have been much inflamed and thickened, not, as Dr. McDowell supposed, from the effects of the previous tapping, but from organic disease of its own structure. For ten or fifteen days after the operation there was a bloody putrid discharge from the wound, "which," says Dr. McDowell, "I am well assured could arise from nothing but sloughing of the omentum."*

Notwithstanding her debilitated condition before and for sometime after the operation, Miss Plasters entirely recovered. On the 4th of August, less than three months after the removal of the tumor, Dr. McDowell informed Dr. Galt that she was in "perfect health and spirits."

Lithotomy and Calculous Diseases. From the Report of Prof. Gross to the Kentucky Medical Society.—In no department of Surgery has Kentucky acquired more renown than in the treatment of calculous diseases. The operations that have been performed for the removal of stone from the bladder, nearly equal, if, indeed, they do not exceed, all the operations of lithotomy in the other States of the Union. The gentleman—Professor Dudley, of Lexington—who stands at the head of this department of Surgery, not only in Kentucky, but in America, if, in fact, not in the world, has alone operated two hundred and seven times; and, if we add to these cases those that

* Letter to Dr. Galt, August 4th, 1823.

have occurred in the hands of other surgeons, the aggregate will amount to nearly, if not quite, four hundred. It would afford me great pleasure to give, with exact accuracy, the number of operations of lithotomy that have been performed by different members of the profession in different parts of the State, as well as their results; but, for the determination of this question, so interesting and important to the profession, I have not, I regret to say, been able to obtain the requisite data, notwithstanding that no pains have been spared to do so.

It is positively known that the late Dr. E. McDowell, of Danville, had operated thirty-two times several years before he died. Dr. Alban G. Smith, now Dr. Goldsmith, *thinks* that, during his residence in Kentucky, he had over fifty cases.* Dr. Gardner, of Woodsonville, has reported to me fourteen cases. Dr. Bush, of Lexington, has operated six times; Dr. John C. Richardson, and Dr. E. L. Dudley, of the same city, each once. Dr. John Shakleford, of Maysville, has had four cases; and Dr. Craig, of Stanford, two. Dr. W. A. McDowell, during his residence at Danville, operated twice. Dr. Henry Miller, of this city, has had two cases. Dr. John Hardin, while practicing medicine and surgery at Greensburg, operated five times; Dr. L. P. Yandall has operated four times; Dr. William H. Donne, once; Dr. Samuel B. Richardson, twice; and Dr. Joshua B. Flint, .. times.† My own cases amount to thirty. Dr. Walter Brashear, formerly of Bardstown, occasionally operated for stone in the bladder, but how frequently I am unable to say. I am in the possession of a few of the particulars of one of his cases, which I shall take occasion to relate in their proper place. Dr. D. W. Yandell, late of this city, has performed lithotomy four times.

Reduced to figures, the number of cases of lithotomy positively known to have occurred in Kentucky, stand about thus:

Dr B. W. Dudley,	207
Ephraim McDowell	32
A. Goldsmith, uncertain	50
W. Gardner	14

* Letter to the Reporter.

† This gentleman has not honored me with an account of his cases.

Dr. J. M. Bush	6
John Shackleford	4
Henry Miller	2
John Hardin	5
Samuel B. Richardson	2
John C. Richardson	1
John Craig	2
William H. Donne	1
Walter Brasbear	..
E. L. Dudley	1
D. W. Yandell	4
L. P. Yandell	4
S. D. Gross	30

It is an interesting fact, with reference to the etiology of calculous affections, that most of the above cases occurred among the inhabitants of Kentucky and Tennesse. The remainder were brought from Alabama, Mississippi, Indiana, Illinois, Missouri, Ohio and Virginia; a few, perhaps, from other States. Nearly all occurred in white males, the number of blacks being, comparatively, very small. The great majority of the patients resided in limestone regions.

The following facts and cases, illustrative of the operation of lithotomy in Kentucky, have been kindly communicated to me by different gentlemen, during the progress of my labors. It is a source of regret to me that none of the particulars of the late Dr. Ephraim McDowell's operations have been transmitted to me.

I have it in my power, through the politeness of Dr. S. M. Bemiss, of Bloomfield, to present you with a brief occount of one of Dr. Brashear's cases, accompanied with the calculus. The details are, unfortunately, imperfect.

The operation was performed in the summer of 1811, in the neighborhood of Bloomfield, and in the presence of Dr. Harrison, of Bardstown, Dr. John Bemiss, and Dr. Merrifield, the latter of whom is the only surviving witness. The subject, Mr. Falkerson, near sixty years of age, had suffered so much for some months previous to the operation, that his constitution was greatly impaired in consequence. Strong doubts seem to have been entertained by Dr. Brashear respecting his ability to endure an

operation of such magnitude; but his patient was tired of suffering, and wished to be relieved by death, or a successful removal of his calculus. Dr. Merrifield thinks that the operation was performed on the left side of the perineum, with the gorget. After the proper incisions were made, the forceps were introduced, and an attempt made to grasp the stone, but the blades of the instrument could not be expanded sufficiently to admit it. The patient soon becoming exhausted, the operator was obliged to desist from any protracted efforts at extraction, hoping, perhaps, that he might be able to renew them shortly afterwards. In this, however, he was disappointed, for Falkerson died during the ensuing night, and Dr. Merrifield removed the calculus, which I here exhibit to you, after his death. Its weight was originally considerably over seven ounces, but by attrition, drilling, and the evaporation of its fluid constituents, it has been reduced so much as to amount at present only to a little more than four ounces. It is of an oblong, ovoidal shape, rough on the surface and laminated in its structure, but what its composition is I know not. Its short circumference is six inches; the long seven and a half.

Dr. Merrifield speaks in high terms of the skill and celerity with which Dr. Brashear accomplished his operation, and thinks that the debility and exhaustion of the patient were the only obstacles to the successful removal of the calculus.

In 1808 Dr. Brashear performed the operation of lithotomy upon a boy, about twelve years of age. The case, which presented nothing unusal, was perfectly successful.*

Dr, William A. McDowell, during his residence at Danville, many years ago, operated twice for stone in the bladder. The first case, which was remarkable on account of the early union of the wound, was that of a youth of eighteen, cut with the gorget. No urine passed through the perineum after the operation, the parts having closed by the first intention. The recovery was rapid and uninterrupted.

In the other case, the patient, a lady, aged thirty three, suffered great torments from the calculous affection, in

* MS. letter of R. B. Brashear, Esq., to the Reporter.

addition to incontinence of urine. In March, 1820, four stones, about the size of walnuts, were extracted from the bladder by the lateral operation. The wound healed without difficulty, and with relief from all anoyances, save the incontinence of urine, which continued up to the time of Dr. McDowell's removal to Virginia, three months afterwards.

In February, 1826, Dr. John C. Richardson, of Lexington, performed the lateral operation of lithotomy upon a youth of twenty-one, the only instruments used being a scalpel and a staff grooved on its left side. The stone was of large size, and could not be extracted without the dieision of both sides of the prostate, in the manner since so strenuously recommended by the late Mr. Liston. It was of the ammoniaco-magnesian phosphate variety, five ounces and a fourth, and was three inches and a half in its long, by two inches and a quarter in its short, diameter. The case, as I am infomred by Dr. Samuel B. Richardson, of this city, a brother of the operator, was perfectly successful.

Dr. Henry Miller, in 1830, during his residence at Harrodsburg, operated upon a mulatto boy, aged three years and a half, for stone in the bladder. He belonged to Capt. Wm. Robinson, of Anderson county, Kentucky, and had suffered from symptoms of calculus since very early infancy. The stone was quite friable, and broke into a number of fragments in the extraction. The boy recovered, and had no return of the disease during the two or three years he was under Dr Miller's observation.

In August, 1849, Dr. Miller operated upon a young girl, in her fifthenth year, from Meade county, Kentucky. After having given chloroform, he introduced a pair of common curved polypus forceps into the bladder, seized and extracted a very rough stone, resembling a Jamestown bur, weighing 264 grains, and measuring a little over an inch in diameter. The lacerated mucous lining of the urethra hung out at the meatus, after the operation, and was clipped off with the scissors. She had no bad symptoms, and went home in a few days. She has remained well ever since.

Dr. John Shackleford, of Maysville, writes that he has operated four times for stone in the bladder, and in every instance successfully. One of his patients, who became

afterwards intemperate, suffers occasionally from incontinence of urine.

Dr. S. B. Richardson, of this city, during his residence at Lexington, operated twice for stone in the bladder. In one of the cases he removed three calculi, two of which were so large as almost to fill the organ. The patient, three and a half years old, had a speedy recovery, although she labored, at the time, under serious disease of the rectum and bladder.

Dr. L. P. Yandell has operated for stone in the bladder four times, using the gorget in every instance. The first three cases were successful; the fourth, a little boy, four years old, in bad health, died, never having fully recovered from the shock of the operation.

Dr. D. W. Yandell has performed the lateral operation of lithotomy four times; in all with the history, according to Liston's method, and in all with success. One of the subjects was a man, aged twenty years, who had suffered long with the stone; the other three were boys, in their fourth year. The recovery in each case was prompt and perfect. The patients all resided in Tennessee.

Dr. Gardner, of Woodsonville, has performed the operation of lithotomy fourteen times; using the knife and adopting the lateral method. All his patients, save one, recovered. Death in this case was produced, as was supposed, by the accidental fracture of the calculus, in the attempt at extraction, thereby necessitating its removal piece-meal, a work of great pain, difficulty and danger. Acute cystitis immediately supervened, and resisting every effort to arrest it, terminated fatally on the fourth day after the operation. The patient was a man aged twenty-five.

Of the above cases, four were from Barren county, two from Warren, two from Green, one from Taylor, one from Edmonson, one from Hardin, and three from Hart, the residence of the operator. In all these counties the limestone formation prevails, and limestone water is universally used for drinking and cooking purposes.

All the patients were males, and all, save one, were white One was a blacksmith, and one the son of a merchant; all the rest, except one, were farmers or the children of farmers. Two of the patients were brothers. There was not a single instance of double or multiple

calculus, and only one case in which a stone formed after the operation

The ages varied from five to forty-two, as follows: 5, 7, 7, 7, 7, 7, 9, 10½, 16, 17, 19, 20, 25, 42.

In one of his cases, Dr. Gardner, after having, in vain, endeavored to extract the stone by the lateral operation, was obliged to open the bladder above the pubes. The patient was a man, aged forty-two years, for the last fifteen of which he had suffered under symptoms of the disease. Having incised the perineum, the operator was absolutely unable even to introduce the forceps into the bladder, much less to expand them over the concretion, the weight of which proved to be nine ounces, while it measured nine inches and a quarter in its greater circumference, by three and a half in diameter. Undaunted by so unexpected an occurrence, Dr. Gardner at once determined to perform the supra-pubic operation, and after some difficulty, owing chiefly to the large bulk of the stone, and the firm contraction of the bladder, succeeded in accomplishing his object. The patient recovered slowly, but without much trouble, and by the eighteenth day was able to walk about his room. The upper wound soon healed, but a small fistulous aperature remained in the perineum for some months, when it finally closed. Two years and a half after the operation, upon sounding the man, Dr. Gardner found that the bladder again contained a large calculus. A short time after this he was seized with an attack of intermittent fever, which, added to his other afflictions, soon carried him off. The body was not examined.

Self-Castration. From the Report of Prof. Gross to the Kentucky Medical Society.—The folllowing interesting case of self-castration has been communicated to me, through Dr. Frazee, of this city, by Dr. Samuel R. Sharpe, of Maysville:

W. O. N., aged twenty years, of a lymphatic temperament, light complexion, six feet high, and weighing one hundred and seventy-five pounds; a teamster and drover by occupation, came to Maysville in the autumn of the year 1849, having emasculated himself only the

day previous. Calm, clear and collected upon every subject except that of his sexual organs, which he said had caused him more trouble than all the rest of his system put together, he viewed the act of mutilation in all its bearings and aspects with the utmost indifference, declaring that it was far better to part with the offending members than to be a slave to his passions. Looking upon the matter in this philosophical light, he had not hesitated to perform the operation, and now that it is over both his feelings and his conscience fully approved the act. He had no regrets, and he was satisfied that his future would be far more happy than his past life. This feeling of self-approbation continued for more than a year, but of late his conduct has been a source of deep chagrin and mortification to him.

The operation was performed in the woods, by himself, with a razor, at least half a mile from any dwelling, about five o'clock in the afternoon. There was but little external hemorrhage, but the blood collected in the scrotum, distending it to the size of a cocoa-nut. To guard against bleeding, he scraped the spermatic vessels, as he had often scraped those of a pig. The first testicle he removed, he said, in a very bungling manner, as his incisions were all too light; but the other was taken away very quickly and neatly. Hoisting his umbrella, he coiled himself up under it, and in this condition remained until the next morning, passing a calm and quiet night, not even thinking of the women. It is worthy of remark that this man labored under gonorrhea at the time of the operation, and that the removal of his testes completely cured this disease without the aid of local or constitutional treatment. The reporter of the case facetiously asks, what do you think of such a remedy for clap? Do you think it would become popular?

The treatment of the case after it fell into the hands of Dr. Sharpe was very simple. Poultices of cinchona and charcoal were used until the coagula were digested off, when they were replaced with cloths wet with warm water. A mild vegetable tonic was administered, and a nourishing diet enjoined. The patient left Maysville in about a month. Dr. Sharpe states that he occasionally sees this man, and that he can observe a sensible change in his hair and beard, both becoming thinner and softer.

His voice is unaltered, and there is no increase of flesh or fat. His industry and power of endurance are about the same as before the operation. He still retains some propensity for women, and declares that he has indulged in sexual intercourse with feeling of a pleasurable kind.

Treatment of Spontaneous Aneurism by Rest and Absolute Diet. From the Report of Prof. Gross to the Kentucky Medical Society.—Prof. Bush, of Lexington, has communicated to me the particulars of a case of spontaneous aneurism of the abdominal aorta, in which marked relief of the symptoms seems to have followed the observance of a most rigorous diet. The patient, Mrs. Anderson, a midwife, aged sixty, resides in Madison county, Kentucky, and had led a very exposed and laborious life for many years. When Dr. Bush first saw her, about three months ago, the tumor, situated just below the stomach, was about the size of a pullet's egg, and pulsated most violently, emitting all the usual aneurismal sounds. The heart was involved in the trouble, laboring and irregular in its actions. Believing that the case would be fatal, Dr. Bush merely advised quietude and absolute diet, barely enough of the lightest and least stimulating articles to support life. For a short time she grew worse, and her physician Dr. Evans, informed Dr. Bush that a *post-mortem* examination could be obtained when she died. Not long afterwards he learned that, under a rigid adherence to the treatment, the woman was rapidly improving, in fact, getting well, with a decided subsidence of all the local symptoms. "This," adds Dr. Bush, "is the whole of my experience in spontaneous aneurism, excepting one or two cases which I have seen in the hands of Dr. Dudley, treated in the same manner, but not of Kentucky."

The starving plan of treatment, first recommended by Valsalva, and so happily employed by Dr. Bush in the above instance, is worthy of the serious consideration of the surgeon in all cases of spontaneous aneurism, inaccessible to the ligature. When properly carried out, it may not only retard the fatal progress of the disease, but occasionally even effect a cure, especially in the milder and more recent forms of the affection. Valsalva's plan, as

is well known, was to subject his patients to the most perfect rest in the horizontal posture, and to diminish the quantity of food gradually, till only half a pint of soup was allowed in the morning, and a quarter of a pint in the evening, with a very small quantity of water, medicated with osteocolla, or mucilage of quinces.* This treatment was aided, particularly in robust subjects, by the repeated abstraction of blood. Professor Dudley asserts that he has cured some cases simply by restricted diet, without the use of the lancet; and a recent foreign journal mentions several instances of a similar kind relieved by Dr. Bellingham, of Dublin.

Case of Abscess of the Brain. By Thomas F. Cock, M. D.—James McDonald, aged 40, native of Ireland, laborer by occupation, was admitted to Bellevue Hospital, August 14th, 1851. A few days before admission, while at work in the sun, he was suddenly attacked with a severe pain in the forehead, having previously been in good health, though of intemperate habits. The pain had continued up to the time of admission without intermission. There was no corresponding constitutional disturbance, no acceleration of the pulse, no obtuseness of the intellect, no paralysis; the only abnormal symptom being the pain in the head. His physical appearance was that of a robust, healthy man. ℞.—Mag. sulphat. ℥j, blister to back of neck and Hoffman's anodyne ℥ss, the first night.

August 15th.—The salts have purged and the blister vesicated; no improvement. Ordered cups to temples, and calomel with rhubarb, ā grs. x.

16th.—No improvement; ordered blister to each temple, pulv. antimonialis, grs. iij, ter in die, for two days.

18th.—Blister to forehead 4+3; at night tinct. valerian and Hoffman's anodyne, ā ℥i, also tart. ant. et potass. gr. ½ every two hours.

19th.—Pain somewhat relieved since administration of tartar emetic. This improvement, however, was only temporary. Patient walks about the ward and yard, com-

* Cooper's Surgical Dictionary, art. Aneurism.

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19th.—Pain somewhat relieved since administration of tartar emetic. This improvement, however, was only temporary. Patient walks about the ward and yard, com-

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pressing his head with his hands; continues to eat and digest his food as if in perfect health.

September 1st.—Pain increased, apetite failing; patient sits by his bedside, his head clasped tightly by his hands, and resting on the bed. Ordered pulv. antimonialis. From this time patient's intellect became more and more obtuse: he ceased to complain of pain in the head; repeated questions put to him without returning any answer. His pulse diminished in frequency, falling to 55 per minute. He lingered in this condition several days, and expired at five o'clock, P. M., September 5th.

Autopsy.—On the anterior portion of the frontal bone was found a space two inches in extent by one in breadth, irregular in shape, denuded of its pericranium, the external table being also partly gone; extending from this diseased portion there is apparently a slight fissure. The part of the bone deprived of its pericranium is over the external portion of the orbit. There is no disease of the internal table; the membranes were considerably congested, the dura mater over the diseased portion of brain was thickened and adhered. The cerebral tissue beneath it was soft and diffluent. A portion of the brain over the posterior cornua of the right ventricle was softened, as also in a marked degree the anterior wall of the left ventricle and under surface of the fornix. Posteriorly to the diffluent portion above described is an abscess as large as a walnut, the walls of which are formed by a hardened reddish mass. The brain in its vicinity was pale and softened, other organs healthy.—*N. Y. Jour. Med.*

New Effect of the Administration of Chloroform.—Dr. Guisard presented the following note for publication:

My child, a boy of three years, attacked by a painful phymosis, could not, or rather would not, perform the acts of micturition and defecation, from an apprehension of the excessive pains which the muscular contractions necessary to the acts would create in the diseased part. The consequence was a retention of urine and fecal matters. The 8th of July last he was upon the point of being operated upon for his phymosis by my confrère and friend, M. Rigal. In order to relieve the little patient of the

pain of the operation, we administered chloroform. Scarcely had my child become insensible, and fallen into a state of general resolution, when the urine escaped by a large rapid jet, and the fecal matters, diluted by several enemata given in the morning, soon followed with no less impetuosity. The bladder and the rectum were completely emptied. Have we not discovered, exclaimed M. Rigal and myself, much astonished, a new and precious therapeutic resource in cases of spasmodic retention of either the urine or fecal matters?

The next day, twenty-four hours after, my little patient, still prevented by fear of the violent pains, had not urinated. Instead of having recourse, as previously, to the sound and the able hand of M. Rigal, in presence of a full bladder, typanism of the abdomen, burning heat of the skin, the complaints of the child, his resistence to micturition in spite of entreaties, promises and threats, I laid him upon his mother's lap and administered by force a small quantity of chloroform. Scarcely had his limbs and the whole body, yielding to the action of the anæsthetic agent, fallen into a state of resolution, when the child urinated, as upon the previous day, in a perfect manner. But what was remarkable, the child was not completely insensible: he had preserved his intelligence and consciousness of exterior life, which was manifested by his saying to us that it no longer hurt him to make water.—*Union Medicale.*

Calculous Diseases in China.—The frequency of the admission of calculous disorders into this hospital (Canton) is another proof of the erroneousness of the belief which once prevailed in regard to the existence of these diseases in the Eastern tropical climates. This opinion was based principally upon the testimony of Mr. Scott, an English writer, who remarked that "the formation of stone in the urinary bladder is nearly unknown between the tropics. I have, indeed, not met with a single instance of it, although I have known some cases where such a disease was imported and not removed by climate." Mr. Smith, in his *Statistical Inquiry into the Frequency of Stone in the Bladder* (Med. Chir. Trans. vol. xi.) quotes the authority

of Mr. Hutchinson, that the operation for stone was never performed in the British foreign possessions. The cause of this freedom from calculous diseases in such regions was attributed to the greater activity of the cutaneous system and proportionable decrease of the urinary secretion. English surgeons, however, attached to the East India service, have not only proved the utter groundlessness of this opinion, but, by the publication of their cases, show that it is a very common affection, its frequency varying, as in other countries, with localities. Mr. Burnard (*Trans. of Med. and Phys. Soc. of Calcutta*, vol. v.) gives a table of thirteen operations, of which twelve were performed in 1830, at the Hospital of Benares. Mr. Brett reported in the same volume seven operations, of which number three died of tetanus. In the subsequent volumes of the Transactions a large number of cases is recorded. In the 4th volume, Mr. Lindsay reports an operation by a native, and remarks that this surgeon said he had operated 150 times. In the *Trans. Med. and Phys. Soc. of Bombay*, Dr. Arnott speaks of calculous diseases as common in the villages of his vicinity. —*N. Y. Journal of Medicine.*

Extract from Bartlett's Discourse on Hippocrates.—And now, leaving the sterile island of Thasos, let us follow the young physician to another sick chamber—to a scene of domestic life, still further illustrative of that remote and wonderful period, with which we are concerned.

The time is a year or two later—it is the house of Pericles that we enter, and stand by the death-bed of the great and venerable Archon. Every thing in the spacious apartment indicates the pervading presence—not of obtrusive grandeur, or of showy and ostentatious wealth—but of stately elegance, and of high, various, many-sided luxury, culture and refinement. Philosophy, letters and art breathe in the quiet atmosphere of the room; and the taste of Aspasia sheds an Asiatic grace over its furnishing and its decorations. In one corner stands a statue of Minerva from the chisel of Phidias; and the walls are covered with pictures, fresh from the pencils of Panænus and Polygnotus, illustrating the legendary and historic

glories of Greece. There might have been seen Thêseus, bearing off from the field of victory, on the banks of the Thermódon the masculine and magnificent queen of the Amazons—half willing, perhaps, to be the captive of such a victor; Jason, in his good ship Argo, with his fifty selectest heroes, convoyed by the queen of love, and the awful Hêre, and Apollo, winds his various and adventurous voyage, crowded with poetic imagery and romantic incident, and brings back the golden fleece from Colchis; Helen, at her loom, is weaving into her "golden web" the story of the Trojan wars; the chaste Penelope, by the light of her midnight lamp, undoes the delusive labors of the day; Ulysses, returned from his long wanderings, surveys once more, with boyish pride and delight, the dear old bow, which no arm but his could bend.

The central figure on that old historic canvas that I have endeavored to unroll before you, is that of the dying statesman. Raised, and resting in solemn and august serenity upon its last pillow, lies that head of Olympian grandeur, which—I may say it without presumption—after the lapse of twenty-three centuries, now finds, for the first time, its fitting representative and likeness—as the character and career of the great Athenian find their counterparts also—in that illustrious orator and statesman, who now walks in solitary majesty amongst us—the pride, the strength, the glory of the Republic—the Pericles of our Athens—whose Acropolis is the Constitution of his country—whose Propylæa are the freedom and the federation of the States.

Added to the calamities of that long and disastrous internecine struggle between the two rival cities of Greece, which had just begun, Athens was now afflicted with that terrible visitation of the plague, the history of which has been left to us by Thucydides; and Pericles was sinking under a protracted and wearing fever—the result of an attack of the disease.

His long and glorious life is about to close. He had been, for more than an entire generation—if never the first Archon, and not always the most popular—by common consent the most eminent citizen, statesman, and orator, of the Republic—the great defender of her Constitution—the champion of her freedom and her rights—the upholder and the magnifier of her renown. Political

rivals, diappointed partizans, and a few malignant personal enemies, and professional libellers and satirists, had been hostile to his carreer, and had endeavored to blacken his fair fame; but his strong and unshaken democratic faith —his far-seeing sagacity—his firmness and moderation—his enlarged, liberal, humanizing, conservative, and pacific policy—his moral courage and independence, and his high public probity, had triumphed over th m all; and although by braving the prejudices of his friends and supporters, in his devotion to the general weal, he had gathered over his declining sun some clouds of public disfavor—the sense of justice, and the feeling of gratitude, in the minds of his countrymen were quick to return—the clouds were already scattered, or they served only to deepen and reflect the setting splendor which, for a moment, they had intercepted and obscured.

Many of his near personal friends and relatives had already fallen victims to the pestilence. Both his sons had perished, and the young Pericles—the child of Aspasia—had been sent away, with his mother, for safety, into Thessaly. Phidias, and his old teacher Anaxagoras, his

"Guide, philosopher, and friend,"

had died a little while before the breaking out of the epidemic. Those who were left had now gathered around the bed af the dying Archon, to receive the rich legacy of his parting words, and to pay to him the last solemn and kindly offices of life.

Not often in the w orld's history has there met together a more august and illustrious company. These are a few of tho e whom we are able to recognize amongst them: Resting his h ad on the shoulder of Socrates, and sobbing aloud in unrestrained and passionate sorrow, leans the wild and reckless Alcibiades—just in the first bloom of that resplendent personal beauty which made him seem to the eyes, even of the Greeks, more like the radiant apparition of a young Apollo, than any form of a mere earthly mould—subdued, for the first time in his life, and probably for the last—by the spectacle before him, of his dying relative and guardian—to reverence, tenderness and truth. Sophocles, his old companion in arms, is there; and near him, in his coarse mantle, and with unsandalled feet, may have stood a grandson of Aristides, still poor with the honorable poverty of his great ancestor.

Conspicuous amidst this group of generals, admirals, statesmen, orators, artists, poets, and philosophers—in rank and fortune, in social position, in reputation, in learning. culture and refinement, their equal and associate, sits the young physician of Cos. Already had his rising fame reached Athens, and when the city, overcrowded with the inhabitants of Attica, driven from their home by the armies of Sparta, was smitten with the pestilence, he was summoned from his island home in the Ægean, to stay, if he could, the march of the destroying angel, and to succor with his skill those who had fallen under the shadow of its wings.

Catalepsy. By Dr. W. P. Jones.—Several years ago, while in one of our Western States, I accepted a courteous invitation from Dr. W., to visit with him an interesting young lady, whom he represented to be in a cataleptic condition.

It was probably 11 o'clock, A. M., when we entered the room of the patient, who was in bed—her eyes, and seemingly her mind, steadily fixed upon some object on the ceiling—her pulse exceedingly slow, respiration perhaps twelve to the minute. This being her condition, of course our entrance to her room, and nearer approach to her bed, had been unobserved by other than the family and friends; and here, in company with Dr. A. (consulting physician), we carefully observed her then condition.

During the intervals of respiration, Dr. W. (who, by the way, was not a believer in animal magnetism) placed his hand over hers, and by slowly raising his hers followed; this he did frequently, and under similar circumstances, with like results. I exerted more control over her than did Dr. W; Dr, A., however, exerted greatly more influence than either of us. By placing his hand at the distance of an inch from her forehead, he could bring her almost to the sitting posture; she, however, fell like lead the moment she commenced breathing. Without touching at all, but by merely bringing my index finger in close proximity to either of hers, they were flexed and extended at will. And by placing her hands in any position which caprice or fancy might suggest, there they would remain until the next inspiration.

This condition was uniformly succeeded by the most frightful convulsions, which lasted, usually, from ten to fifteen minutes; after which she gradually resumed a state of tranquility and consciousness. Notwithstanding the treatment which the most skilful physicians were competent to adopt, these paroxysms were of almost daily recurrence for several months, when she slowly though entirely recovered.—*Nashville Southern Journal.*

Bite of the Rattlesnake. By Thos. A. Atchison, M. D. —I believe as yet no distinguished authority has elevated the claims of alcohol to the character of a specific in this terrible malady; a character to which I think it justly entitled, as the following case will show.

I was summoned in haste, on the evening of the 20th September, 1852, to see Miss R., a young lady aged 17, living five miles in the country, who (I was informed by the messenger), while taking a stroll in company with her mother, was bitten by a rattlesnake. I arrived at half-past seven o'clock, two hours and a half after the accident. I found my patient almost moribund, pulse wavy and scarcely perceptible at the wrist, surface cold and bathed in perspiration, face swollen, with a besotted expression, mind wandering, pupils dilated, could not see, declaring that it was very dark, although candles were burning in the room; asked frequently if it were not raining hard, although the night was calm and clear. Upon examination I found that the bite had been inflicted on the instep of the left foot; two little punctures were very perceptible, around which there was a greenish areola, with some puffiness.

Having heard of the marvellous efficacy of "spirits" in the relief of similar cases, I at once determined to give the remedy a full and fair trial. Reason and analogy sustained it. The nervous system was overwhelmed by a swift and deadly sedative poison; it must be supported by an equally powerful *diffusible* stimulant. Accordingly I gave half a glass of whisky, which was swallowed with avidity. Meanwhile the wound was freely scarrified and cupped, and the extremities placed in a hot saline bath. Twenty grains of carb. ammonia was then given, which

was immediately thrown up, together with the contents of the stomach, colored a bright grass green. A common sized glass full of whisky was now given, the patient draining with eagerness the last drops, and begging with the energy of instinct for more. Thus a glass of whisky and twenty grains of carb. ammonia were given alternately every half hour, until three pints of the former and eighty grains of the latter were taken; and what is remarkable, not the slightest intoxication ensued; on the contrary, the urgent and alarming symptoms gradually gave way, warmth was restored to the surface, the pulse returned to the wrist, the mind was called back from its wanderings, and she fell into a quiet sleep, from which she awoke at five o'clock, A. M., complaining of intense pain in the foot, shooting up the inside of the leg to the knee. Ordered morphia gs. ¼, fomentations of laudanum and camphor, followed by poultice of linum lini, with the effect of entire relief of pain. The following day castor oil was given to move the bowels. From that hour she suffered no further inconvenience from the bite.

The instinctive avidity and impunity with which this delicately nurtured young lady took such a large quantity of spirits—sufficient, under ordinary circumstances, to kill a regular *habitue*—would excite astonishment, if we did not reflect that it was antagonized by the depressing effect of the poison on the nervous system.

But the most interesting feature in this case remains to be stated: Miss R., at the time she was bitten, was the subject of well marked hooping-cough, which was then epidemic in the neighborhood. She had had the disease about three weeks, consequently it was at its acme. But on recovering from the effects of the poison, to her great surprise and gratification, her cough had disappeared also, nor did it return. Being essentially a spasmodic disease, it was swept away by the powerful impression made upon the nervous system.

This interesting and novel fact, it seems to me, furnishes some hints in the treatment of this hitherto intractable malady—hooping cough.—*Southern Journal.*

Analysis of Mineral Waters. (From the Southern Journal of the Medical and Physical Sciences.)

1. *Nashville Sulphur Spring*—Prof. Bowen:
   Sulphuretted Hydrogen,
   Carbonic Acid,
   Hydrochloric Acid,
   Sulphuric Acid,
   Magnesia as a Sulphate,
   Soda as a Hydrochlorate.

2. *Sam's Creek Spring, Davidson Co.*—Prof. Troost:
   Twenty Fluid Ounces.
   Sulphuretted Hydrogen,
   Carbonic Acid,
   Sulphate of Lime,
   Hydrochlorate of Soda.

3. *Tyree's Springs, Davidson Co.*—Prof. Troost:
   Sulphuretted Hydrogen,
   Carbonic Acid,
   Sulphate of Lime,
   Sulphate of Magnesia,
   Carbonate of Lime,
   Hydrochlorate of Soda.

4. *Shelby Chalybeate Spring, Nashville* — Richard O. Currey:
   Temperature of Spring 61°, while air was 90°.
   Carbonic Acid, free,
   Carbonate of Iron,
   Carbonate of Magnesia,
   Carbonate of Lime,
   Chloride of Sodium,
   Sulphate of Magnesia.

5. *Bayley's Spring, Florence, Ala.*—Richard O. Currey:
   Carbonic Acid, 324 cubic inches in a gal.,
   Carbonate of Magnesia,
   Carbonate of Soda,
   Carbonate of Iron,
   Carbonate of Potash,*

* According to Prof. Tuomey.

Iodine,
Chloride of Sodium.

[The analysis of this spring was made in June, 1852, in reference to the quality, not the quantity, of its ingredients. There were distinct indications of iodine present, to the amount at least of three grains to the gallon of water. It probably exists in combination with the potash as an hydriodate. These springs are noted for their efficacy in scrofulous and dropsical diseases.]

6. *Congress Spring at Saratoga*—Steel:

Carbonic Acid,	cubic in.	311 in a gallon.
Atmospheric Air,		7
Chloride of Sodium,	grs.	385
Iodide of Sodium,		3.5
Bicarbonate of Soda		8.98
Bicarbonate of Magnesia,		95.78
Carbonate of Lime,		98.09
Carbonate of iron,		5.07
Silica,		1.5

Bromide of Potassium, a trace.

7. *White Sulphur Spring, Va.*—Prof. W. B. Rogers:

Sulphuretted Hydrogen,	cubic in.	2.5 in a wine gallon.
Carbonic Acid,		2
Oxygen,		1.4
Nitrogen,		3.5
Total,		9.4

Solid contents in a pint.

Sulphate of Magnesia,	grs.	5.5
Sulphate of Lime,		7.7
Carbonate of Lime,		1.1
Chloride of Calcium,		0.2
Chloride of Sodium,		0.1

Oxide of Iron, a trace.

Loss,	0.4
	15.0

8. *Iodine Spring, at Saratoga*—Prof. Emmons:

Carbonic Acid,	cubic in. 336 in a gallon.
Atmospheric Air,	4
Chloride of Sodium,	grs. 187 in a gallon.
Carbonate of Magnesia,	75
Carbonate of Lime,	26
Carbonate of Soda,	2
Carbonate of Iron,	1
Iodine,	3.5
	294.5

Congenital Occlusion of the Vagina.—Throughout the medical journals are scattered notices of congenital occlusion of the vagina, sometimes combined with obvious arrest of development of the uterus,—sometimes with simply an imperfect condition of the vaginal orifice. We have upon former occasions mentioned the particulars of cases of extroversio vesicæ in the male, where the generative organs were incompletely formed: and we recall an observation made by Mr. Coote, that the arrest of development was not confined to the external parts, but that it extended to the whole segment of the body and the system of organs in wich these imperfect structures were situated. The same remark is applicable to congenital occlusion of the vagina. In some instances the nymphæ alone are adherent; in others, one, two, or more inches of the anterior part of the vagina are obliterated; the uterus may be ill formed, and the ovaries in no condition to mature ova, but in all cases the arrest of development of the internal parts is in relation with the amount of external deformity. The practical points connected with this law are equally applicable to the two sexes. In the male, suffering from extroversio vesicæ and fissured penis, the bones of the pelvis are usually small, and the pelvic cavity is shallow; the bladder, almost an abdominal viscus, retains its fœtal connexions to the peritoneum; the prostate gland is small and rudimentary; there is no trigon vesicæ uncovered by peritoneum; consequently we read without surprise of surgeons wounding the serous membrane with the trochar in their attempts to establish a rectovesical

fistula as a preliminary step in the cure of this malformation. As regards the female, we may infer, that if with congenital occlusion of the vagina there be, at the time of puberty, no indications of the menstrual secretion, both external and internal organs are in a condition which cannot be relieved by surgery; but if the uterus, to all appearance, be healthy; if it become in course of time distended with menstrual secretion, and the patient suffer the usual pains and inconveniences, we may conclude that there is a vagina, an os tincæ, uterus, and ovaries, but that from some cause the external orifice, and an inch or more perhaps of the external meatus, are obliterated and adherent. It follows, then, that an operation, carefully performed, may relieve the patient of this distressing affliction; the vagina may be opened beyond the occlusion, and a canal may subsequently be established by the use of pessaries.

In the *New York Journal*, 1845, there is an account of a young German woman suffering from occlusion of the vagina. She had the sexual passion, but had never menstruated. Her general health was good. On inspection, it was found that she had no vagina. there was no abdominal swelling. Dr. Watson introduced into the urethra a silver catheter, which he committed to the charge of an assistant. Then passing the fore finger into the rectum, he divided the parts at the natural situation of the vagina, between the catheter and the finger. After dividing an inch and a half of tissues, the parts yielded to pressure, and the passage was restored to the os tincæ; it was, however, small, and the uterus was atrophied. The passage was kept open by the pessary, and ultimately rendered fit for all its functions by continued distension.

The *Medical Times*, 1845, contains some remarks upon this affection by Dr. Vaudroy; and Maissonneuve has performed an operation similar to that of Dr. Watson and of Mr. Wormald, who has lately successfully treated a case in most points similar to that which we have noticed above from the *New York Journal*.

Emma W., aged 19, a well formed and not bad looking girl, with an unmeaning and vacant expression of countenance, was admitted into St. Bartholomew's Hospital, Nov., 1852, under Mr. Wormald, with complete occlusion of the vagina. The labia, when open, seemed to bound a wall of mucous membrane, in which were seen both cli-

toris and urethral orifice, but there was no passage towards the uterus. The finger introduced into the rectum came in contact with a solid, elastic, bulging tumor, evidently the uterus distended by menstrual secretion, and pressing upon the anterior wall of the rectum. There was no apparent indication of a vagina, but the uterus bulged downwards to within about two inches of the surface of the perineum. The patient suffered considerable inconvenience from the pain in the back and loins at the menstrual periods; the bowels had become habitually costive. The rectum having been emptied by proper remedies, and the viscera being in a healthy state, Mr. Wormald performed the following operation, December 3: Chloroform having been administered, and the bladder and rectum previously emptied, the patient was tied, as in the operation of lithotomy. Mr. Wormald made an incision in the perineum, extending from the left labium obliquely downwards and outwards to the ramus of the ischium in the direction of the os tincæ, and in the interval between the urethra and the rectum, the coats of the latter viscus being indicated by the presence of the forefinger of the left hand introduced per anum. After carefully cutting in this narrow interval for about an inch and a half to two inches, Mr. Wormald came upon some yielding tissues, and then to the uterus. A trocar passed readily (and it was suspected through the os tincæ) into the cavity of the organ, and there was discharged fourteen ounces of thick, grumous, bloody fluid. A gum elastic catheter was introduced, and the patient was then removed to bed. There was an escape of bloody fluid during the next thirty-six hours, but this has slowly subsided. The patient has suffered occasionally from retention of urine, but there have been no unfavorable symptoms, and there is every prospect of a successful result.

Mr. Callender, the house surgeon, examined the fluid microscopically, and found that it consisted of epithelial scales, and altered blood discs.

There is reason to believe that, in the present instance, the vagina, which was obliterated to an extent of two inches from its orifice, yet existed above that spot, but was occupied by the distended uterus, which had sunk much nearer the perineum than natural, owing to its great enlargement.—*London Medical Times and Gazette.*

Yeast in Diabetes.—Dr. Wood stated that he had a case of diabetes now under treatment in the Pennsylvania Hospital, which, in the results thus far obtained, was not without interest in a therapeutic point of view. He would first present a brief sketch of the case, drawn up by his young friend, Dr. R. A. F. Penrose, one of the resident physicians of the Hospital, and would then offer a few remarks.

Mary Ann Cain, born in Ireland, a domestic, aged 30, was admitted into the hospital November 16, 1852, for palpitation of the heart. Upon examination, the heart was found acting with unusual energy and quickness, but the sounds were normal. Her general condition was of extreme emaciation, her weight eighty-three pounds, the pulse frequent but not strong, the tongue red and smooth. She stated that she suffered much from constant thirst, and had a perpetual desire to eat. Attention was directed to the urine, and it was found that she was passing from 18 to 20 pints daily, of a specific gravity varying from 1036 to 1040. On the addition of yeast it fermented briskly. Boiled, after the addition of solution of sulphate of copper and solution of caustic potash, it yielded a reddish-brown precipitate; boiled with solution of potassa alone, it acquired a dark-brown or bistre tint. The case was clearly one of saccharine diabetes.

Two days after admission she was placed upon an animal diet, with non-farinaceous vegetables, and one small buscuit three times a day. Cod-liver oil was also directed, and a *teaspoonful of yeast three times daily, immediately before meals.*

22d.—The quantity of urine now passed in 24 hours was ten pints, and the specific gravity 1022. The thirst and appetite were much diminished. The same treatment continued.

27th.—The patient complained of total loss of appetite, and could not take her cod-liver oil. The tongue was extremely red and inclined to dryness, and there was pain on pressure in the epigastrium. The quantity and specific gravity of the urine were as at last date. The cod liver oil and animal diet were suspended, and she was placed upon farinaceous drinks with milk. A pill, composed of

one grain of blue mass and a quarter of a grain of opium, was directed four times a day, and the yeast was continued.

30th.—The patient felt much better, her tongue was moister and less red, and the gastric symptoms were much ameliorated. Not finding milk to agree with her, she lived chiefly on oat-meal gruel, with a soft boiled egg occasionally. The quantity of urine has now been reduced to seven pints in twenty-four hours, and its specific gravity to 1020.

31st.—The patient continues as yesterday, the urine having amounted, in the last period of twenty-four hours, to only six pints; the specific gravity not examined.

Much light, Dr. Wood observed, had recently been thrown upon the pathology of diabetes. The disease is now admitted to be characterized by sugar in the blood, the kidneys being only secondarily affected. The experiments of McGregor proved that sugar exists in great excess in the stomach of diabetic patients after eating, and it may readily be supposed to pass thence into the circulation. Bernard has shown that the liver in its normal action, produces sugar out of the portal blood, and that this sugar passes through the vena cava, right side of the heart, and pulmonary arteries, into the lungs, where, in a healthy state, it is wholly consumed. Excess in the sugar-producing action of the liver, or deficiency in the sugar-consuming action of the lungs, may be followed by the entrance of saccharine matter into the general circulation, and thus give rise to diabetes. The same physiologist proved that, by irritating a certain point of the medulla oblongata, the liver was made to generate a great excess of sugar, which, escaping decomposition in the lungs, entered the arterial circulation, and passed out with the urine.

We thus perceive that there may be various sources of the saccharine impregnation of the blood. *In the first place*, it may arise from some defect in the gastric digestion, in consequence of which farinaceous and other nutritive substances are converted into glucose or grape-sugar, which remains unchanged; or, *secondly*, from hypertrophy or other diseases of the liver causing an over-activity of the sugar-producing function; or, *thirdly*, from diseases of the lungs, impairing their power of

consuming sugar; or, *fourthly*, from irritation of the nervous centre in the medulla oblongata which appears to control the action of the liver in relation to this product; or, *lastly*, from two or more of these sources combined.

Now, in the case before us, no organic affection of the liver or of the lungs could be detected, and there was no reason to suspect the medulla oblongata; but the smooth, reddened state of tongue, and the epigastric tenderness, seemed to point directly to the stomach as the seat of the disease.

In the number of the Edinburg Monthly Journal of Medical Science, for October last, it is stated that Dr. Gray, of Glasgow, had been induced to make trial of *rennet* in a case of diabetes, in the hope that, as this body converts sugar out of the body into lactic acid, it might be found to produce a similar change within the stomach, and the lactic acid thus generated might be eliminated from the system, or rather decomposed, by the respiratory process. A teaspoonful of rennet was given three times a day. In eight days the specific gravity of the urine was reduced to 1025, with but a trace of sugar; in twenty-five days the quantity was four pints, and the density 1022.5, and no sugar could be detected. At the end of six weeks the urine remained free from sugar, and the patient had so far improved in health and strength as to return to his work.

It occurred to me, observed Dr. Wood, from the results of this case, that yeast might prove equally beneficial, by causing a decomposition of the sugar in the stomach such as it is well known to occasion out of the body, resulting in the production of acetic acid. Being under the impression that, in the case now reported to the College, the primary disease probably resided in the stomach, and that the diabetic sugar was generated there, I determined to try the effects of this remedy. The patient had been two days in the house before she was placed under treatment, and during this period no change had taken place in the quantity or character of the urine. It will have been noticed that quickly after the commencement of treatment a very great change took place in both these respects, the quantity of the urine being reduced, in the course of four days, from twenty pints to ten daily, and the specific gravity from 1036 or 1040 to 1022. But the

almost exclusive use of animal food may be supposed to have contributed to this result. In consequence of the gastric inflammation, it was necessary to suspend this diet, and to allow the patient to use farinaceous food, the yeast being continued. So far from any increase of urine in consequence of this change of diet, its quantity was still further reduced, so that, upon the last day upon which it was examined, it did not exceed six pints, while the specific gravity was as low as 1020, the quantity having been reduced from twenty pints to about double that of health, and the density from 1040 to that of normal urine. There can be no doubt whatever that the sugar has been very greatly diminished; and there is no cause apparent to which the result can be ascribed except the use of yeast.

What may be the further progress of the case cannot, of course, be foreseen. Even should we succeed in preventing altogether the elimination of sugar with the urine, it does not follow that the case will end in recovery. The remedy is addressed only to one of the effects; a very important effect it must be admitted, and itself capable of producing great mischief, but still by no means the whole disease. Nevertheless, if, by the steady use of a remedy so little disagreeable as yeast, we can prevent the abnormal production of sugar, and the exhausting effects on the system of the excessive secretion of urine occasioned by it, we shall have gained one great point. We shall at least gain time for accurately investigating the source of the evil, and applying such remedies as may offer a reasonable hope of permanent benefit.

Dr. Wood observed, finally, that he should probably take occasion, at a future meeting of the College, to report the further progress of the case; and should have been in less haste at present, had he not thought that the remedial measure had some claims to notice, and been desirous that it should, as quickly as possible, recieve an ample trial, so that its merits might be conclusively tested. —Trans. College of Physicians, Philadelphia.

Munificent Gifts to Medical Institutions by M. Orfila.—M. Orfila recently read the following letter before the Academy of Paris:

I do not wait, as is generally the rule, till death has removed me from among you, to assign the sum of $24,000 to different public establishments. I have two reasons for acting thus: first, because it is of some importance that the institutions to which I refer should as soon as possible reap the benefit of the donations which I am offering; and secondly, because I thought that my presence would be of some use to overcome any difficulties which might arise during the carrying out of my plan; or perhaps in order to modify the latter, if the necessity of doing so were clearly demonstrated. I shall not attempt to enter into the reasons which have induced me to give the preference to certain institutions over others; it will be sufficient for me to state that, by giving $12,000 to Government for the completion of the museum which bears my name, it is my intention to endow France with a scientific collection which will be unparalleled, and also to afford students in medicine a new proof of the sympathy and good will with which I have always regarded them. I am also anxious to show them how grateful I feel for the very flattering attention they invariably have given to my lectures for the last thirty-four years. I am anxious, for this reason, that no misapprehension should exist regarding my motives, and have directed the following inscription to be placed over the principal entrance to the museum:

To Students in Medicine.—I founded this Museum, in 1845, for promoting medical studies, and solely to be useful to yourselves.—Orfila.

I have thought it right to found a small annuity in favor af the keeper, who has always rigidly attended to his duties. I also institute two prizes, the one to be given by the Academy of Medicine ($400), the other by the School of Pharmacy ($200), on subjects which have fixed my attention all through life. I have thus no other ambition but that of serving a science to which I have always remained faithful, without allowing myself to be led astray by politics. I give to the Preparatory Schools of Bordeaux and Angers, $200 to the former, and $440 to the latter, to show how I approve of this kind of schools, which were organized upon a proposal of mine. To the Benevolent Medical Association of the Department of

Seine I give $80 a year, in proof of the high estimation in which I hold this society, which I am proud of having founded in 1833.

M. Orfila mentioned various other acts of kindness and benevolence of smaller importance, and received, at the end of his discourse, the hearty and unanimous applause of the members present. The Academy have decided that thanks should be tendered to M. Orfila by a deputation; and the medical press are calling a meeting for the same purpose.—*London Lancet.*

Extraordinary Birth.—Mrs. Emma Erchert, of 65 Oxford street, gave birth last week to a female infant with two heads and two necks. One head came into the world nearly four hours before the other. The infant had full vitality two minutes before birth. Dr. Richards, of Bedford-square, acted as accoucheur, and had to use instruments. The body, which was well proportioned, measured 19½ inches in length, and 9½ from shoulder to shoulder, across the back. The mother dreamed, a fortnight previously, that she would give birth to such a monster. Mr. Erchert retains the body, properly preserved.—*Ibid.*

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DEATH OF PROFESSOR HORNER.

The eminent Professor of Anatomy in the University of Pennsylvania died, on the 13th of March last, in the 60th year of his age. The name of Dr. Horner was known to every practitioner of medicine in America; and his amiable qualities in private life had endeared him to a great number who have been related to him as pupils. We have heard many who had been his private students speak of him with a warmth of affection, that showed how kind and considerate was his deportment as a preceptor and friend. We learn from a biographical sketch of Dr. Horner, in the Medical Examiner, that he was born at Warrenton, Fauquer county, Va., on the 31st of June, 1793. At the age of 17, he commenced the study of medicine with Dr. John Spence, a Scotch physician of considerable reputation.

In the autumn of 1812, he attended his first course of lectures in the University of Pennsylvania, and soon began to evince a taste for that branch of the profession in which he subsequently became so distinguished, being occasionally employed in assisting the Demonstrator of Anatomy in the preparation of Prof. Wistar's lecture. He obtained a commission, the summer following, as Surgeon's Mate in the Army of the United States, and served in a regiment stationed at Fort Mifflin,

near Philadelphia. He took his degree at the University in the spring of 1814, and was ordered, in the summer of that year, to the Niagara frontier, where he was actively employed until the close of the war. After the peace in 1815, he was stationed for a short time at Norfolk, but, resigning his commission soon, he returned to his native town, and commenced the practice of his profession. In the fall of the same year he removed to Philadelphia, where he remained to the end of his life, thirty-three years having been spent in the University of Pennsylvania, as Professor of Anatomy, Demonstrator, and adjunct of his great predecessor, Dr. Physick. His rise, in Philadelphia, was very rapid, and was wholly independent of extraneous circumstances. He was a stranger, without interest or influence, and yet in two years he was made Demonstrator of Anatomy, and three years afterwards adjunct professor of the same branch. On the resignation of Dr. Physick, in 1831, he was chosen professor of Anatomy, in which capacity he continued to act until within a short period of his death.

Professor Horner was a laborious man. He collected, during his long connexion with the University an anatomical cabinet, said to be one of the most splendid and complete in the world. He was an accurate and faithful, rather than brilliant or impulsive teacher. He was clear, simple, and perspicuous, without earnestness or eloquence. He relied on the importance of his subject, and the thoroughness with which he presented it, rather than on grace of manner or beauty of diction; and his happy demonstrations were generally successful in arresting and fixing the attention of his pupils. He commanded the respect and confidence of his class. In every personal and professional relation he was without reproach, and leaves an unstained reputation behind him. He had wisely attended to the substantial rewards of his profession while enjoying its honors, and by his own unaided exertions had secured an ample fortune. "No one," says the writer of the sketch in the Medical Examiner, "could have closed his life under more consolations; and that greatest and best of consolations, a firm Christian hope, had been long and well secured." The same writer adds the following interesting particulars relative to the disease which terminated the life of this eminent and good man:

"Though up to a short period of his death, Dr. Horner continued in the steady discharge of his professional and other duties, he had for years suffered from dyspnœa, palpitation, and other symptoms, which left lit-

le doubt that he labored under cardiac disorder; and the emaciation of his frame made it evident that it was producing serious derangement of the functions of nutrition. For some weeks preceding his death, dropsical effusion had appeared. And, though within a day or two of his death, he was able to participate in the examination of students for degrees, yet we believe that neither himself nor his family entertained any hope that his life could be long protracted. The immediate termination, was, however, somewhat unexpected.

"The *post-mortem* examination confirmed the diagnosis of disease of the heart. It was found very considerably hypertrophied and enlarged, being five and a half inches from the apex to the origin of the pulmonary artery, five and three-quarter inches in diameter, and thirteen and a half inches in circumference at its base. The tricuspid and mitral valves were healthy. The arch of the aorta was dilated and thickly ossified. There was also recent peritonitis, with streaks of fresh coagulable lymph over the peritoneal surface of the intestines. Perforation of the stomach or bowels had been suspected, as the cause of the peritonitis, but no traces of this lesion were found."

OBITUARY NOTICE OF PROFESSOR POWER.

We had the pleasure of a slight personal acquaintance with the gifted Professor of Theory and Practice of Medicine, in the University of Maryland, the late William Power, M. D. The impression which he made upon us in a single, brief interview was exceedingly agreeable. We were pained to hear of his early death, which took place in Baltimore, on the 15th of last August. A beautiful tribute to his memory appeared in the last number of the American Journal of the Medical Sciences, from the pen of his fellow-student and friend, Dr. Alfred Stillé, of Philadelphia. He was an uncommon man, and, if he had lived, would unquestionably have risen to great distinction. From the eloquent and discriminating obituary notice of Dr. Stillé, we make a few extracts which, we are sure, will be read with interest.

"The career of Dr. Power as professor was a distinguished one. That it was singularly successful is proved by the large number of students whom he drew to the University; by the position he at once assumed among his professional brethren, and by the reputation he soon acquired

as a clinical teacher in the College Infirmary. His thorough, systematic, and intelligent study of disease, his accurate diagnosis, and his mode of illustrating one case by another, interested his audience deeply, and accustomed them to observe for themselves. In a word, his whole system of analytical study, as he had learned it from the ablest teachers of Europe, attracted and delighted all of the maturer and best-furnished minds among his hearers, and gradually raised up a class of ardent cultivators of medical science, which has already given to the world some of the fruits of his instruction, and some earnest of their own future attainments. As a lecturer, we are informed, he did not aim at originality, but rested satisfied if what he taught, from whatever source obtained, was *true*. The confidence he inspired was boundless; for did he make a wrong diagnosis, or misstate a fact, he was the first to admit it when discovered, and to confess his error. His lectures were less remarkable for excellence of style and originality of thought, than for their presenting a calm and unbiassed arrangement of the opinions of others, corrected and modified by his own experience. In this, as in all else, he held truth to be more valuable than ingenuity, and a positive result than the most elaborate and cunningly devised fiction. Yet, in dealing with the errors and follies of medical systems, he was careful not to forget the charity which is due to the weakness of human nature, nor the distinction, too often lost sight of, between the doctrines he combated and the persons who propounded or adopted them.

"Dr. Power's health had never been robust. Emphysema of the lungs, and a consequent derangement of the heart's action, had, for a long time, made active exertion fatiguing to him. As long ago as 1837, a pedestrian tour in Switzerland cost him several paroxysms of severe dyspnœa and palpitation of the heart with hæmoptysis; but he did not become seriously alarmed about his situation until nearly six years afterwards. In the autumn of 1843, he was obliged to seek relaxation in Cuba, whence he returned in the following spring, with his health materially improved. He continued better, in the main, although far from being vigorous, and from time to time he showed the effects of too close an application to his duties as hospital physician. His marriage in 1847, and his appointment in the University, which he had received two years before, exerted, doubtless, a very favorable influence upon his health, for he continued to perform with animation and a good degree of vigor his professorial duties, to draw around him a crowd of earnest and attached pupils, and in the social circle to win by his amenity, and in-

terest by his varied talents, a large number of sincere and valuable friends. But the disease which had so long been baffled by skill and sedulous attention at length gave signs that it was obtaining the mastery. During the winter of 1851–52, Dr P. was unable to perform his public duties, and, in February of the latter year, resigned his professorship. In the month of May, the writer of this notice had the satisfaction of an interview with his old companion. He was wasted and wan indeed, for consumption had nearly worn away his earthly dwelling; but his soul shone all the clearer, and brighter, and purer for its freedom from the clogs of flesh. One might well have expected to hear the devotee of science, and the ambitious teacher, mourn over the unfinished career he had run, and resent the defeat of his wishes. But his spirit had been chastened. Contented with his share of worldly success, without a syllable of complaint at the disappointment of his hopes, he could still take interest in the science which he loved, and find in conversation upon its progress a consolation for his own withdrawal from a share in its rewards. Resigned and cheerful, he awaited with patience, yet with strong desire, the moment of his departure; for, while he longed for a release from suffering, he did not disdain the world in which he had been permitted to fit himself for a better.

"For three months after this interview he waxed feebler and feebler, but his soul was more and more brightened by a light from beyond the grave, and displayed to the last moment the calm hopefulness of one whose heart is fixed on Heaven."

LA ROCHE ON YELLOW FEVER.

For a number of years past Dr. La Roche, of Philadelphia, has been engaged in the collection of materials for a work on Yellow Fever, in which he meant to give the history of the various irruptions of the epidemic in this country. Such a work, prepared with the industry, judgment, and fidelity which Dr. La Roche is sure to bring to the task, could not help proving an acceptable and valuable addition to our medical literature. We feel a greater desire to see the work brought to completion since reading some papers on yellow fever, from the pen of the author, in the Charleston Medical Journal, and the American Journal of the Medical Sciences. The labor bestowed by Dr. L. on the subject is evidently very great. He has posseesed himself of all the im-

portant facts connected with it. Among other things, he has convinced himself that the disease is not contagious under any circumstances, but originates always in local sources of miasmatic infection. Ships having the infection on board may introduce it into a place, but never a clean vessel with a healthy crew, from whatever port it may have sailed; and hence the futility, in Dr. La Roche's view, of those quarantine regulations which detain vessels free from the infection, because they have chanced to come from infected points. We trust we shall soon have Dr. L's. work on this interesting subject in extenso.

THE VIRGINIA MEDICAL AND SURGICAL JOURNAL.

We have received the first number of this Journal, and hasten to express the favorable opinion with which we have risen from its perusal. We have no hesitation in saying, that if the editors are able to keep up to the high mark which they have attained in their first issue, their Journal will take a high rank among the medical serials of the day. It is printed on good paper and type, and its matter is of corresponding excellence. We should hope, that among the three thousand physicians of Virginia, it might find, even amid all the pressure of our medical journalism, an adequate body of contributors and subscribers; but whether the profession of the "Old Dominion" rally around it as they ought, or not, we are very sure the enterprising editors have not embarked in "a twelve months voyage to obscurity and the chaos of failures." Every page of their work bears the impress of industry and care, and such diligence, backed by such qualifications for conducting a journal of medicine, will not long be overlooked by the profession. We welcome it cordially, and trust that it may have a long career of usefulness and popularity.

The Virginia Medical and Surgical Journal is published at Richmond, and is to appear monthly. Its editors are George A. Otis, M.D., and Howell L. Thomas, M.D.

CHLOROFORM—PREVENTIVE OF PUERPERAL MANIA.

Dr. Simpson believes, that to the many other valuable properties of chloroform may be added the power of preventing puerperal mania. He

has lately communicated to the Obstetrical Society of Edinburgh three observations relating to women, who, having previously suffered with this malady after confinement, were delivered under the influence of chloroform without any such unpleasant consequence. One of these women, the mother of a large family, had never escaped an attack of the disease in her former confinements.

MONSTROSITIES.

It is now well understood that the fetuses born with defective organization, constituting the "monsters" of which so many cases are on record, are examples of *arrest of development*. The hermaphrodites of the older and later writers, come under this head. It has long been and is still a question, how far the imagination of the mother is influential in the production of such monsters. A curious case of arrest of development is given, by Dr. R. Lee Fearn, in the Proceedings of the Medical Association of the State of Alabama, for December, 1850, in which the impressions of the mother would seem to have affected the child in utero. It is as follows:

"A gentleman, whilst shooting, shot through the metacarpal bone of his index finger. The wound was a bad one, and piece after piece of the bone came away. A few months after the accident here mentioned, and in due season, his wife bore him a child perfectly formed in all respects. When about four months advanced in her second pregnancy, an operation was deemed necessary to remove the last remaining portion of bone in her husband's finger. She witnessed the operation, and was much shocked and alarmed at the sight. When her child was born, it was found to be deficient in this very bone, though in all other particulars it was a well-formed child."

CATALOGUE OF THE GRADUATES OF THE UNIVERSITY OF LOUISVILLE.

A catalogue of all the graduates of the Medical Department of the University of Louisville, from the origin of the school, in 1837, has been published, and copies may be had by application to the Dean of the Faculty, Dr. L. P. Yandell.

MEDICAL LITERATURE OF KENTUCKY.

At the last meeting of the Medical Society of Kentucky the senior editor of this *Journal* was appointed Chairman of the Committee on the *Medical Literature*, or *the History of the Medical Authorship of Kentucky;* and has to request those who have any knowledge of the early medical history of the State, to favor him with communications on the subject. Books, pamphlets, documents of whatever character, written by Kentucky physicians, or any information concerning any that may be out of print and inaccessible, would be particularly acceptable. The wish of the Chairman of the Committee is, to give a full history of the medical authorship of the State.

THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY.

MAY, 1853.

ARTICLE I.—*A Case of Penetrating Wound of the Chest; Pleuritis; Recovery.* By JAMES KNAPP, M. D., of Louisville, Ky.

Johnson Boyles, aged thirty-two years, of good constitution, was stabbed, December 18, 1852, at 8 o'clock, P. M., with a large knife, which penetrated the left side of the chest, severing the cartilage and adjoining intercostal spaces of the third rib, about one-third of an inch from the sternum. He supported himself for a moment against the wall, and, soon observing the sound produced by the passage of air through the wound, made pressure with the hand over the seat of injury, and asked to be helped home, a distance of two squares. By the support of a friend he was able to proceed one square, when he became faint. He was then placed in a recumbent posture and carried home.